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THE MAYA IN TRANSITION: IS THE MAQUILA INDUSTRY IN RURAL YUCATÁN A SUSTAINABLE DEVELOPMENT ALTERNATIVE?

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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ABSTRACT

Using a case study from a rural region of southern Mexico, this work evaluates the performance of a garment assembly plant and compares the findings with the extensive literature on the assembly industry in northern Mexican cities. It assesses the economic, environmental and social impacts of a large garment assembly plant located in a depressed rural area of Yucatán, and considers the implications for semi-industrialised countries' ability to implement sustainable development policies in a liberalised global economy. A social survey of 200 people and 20 in-depth interviews were the main source of data.

Under the New Economic Model (NEM) export assembly activities have accounted for a growing share of the economy of the New Industrialised Countries (NICs). In Mexico such companies have grown rapidly since the 1960s and have constituted the main development policy. Maquiladoras have become one of the principal sources of foreign earnings and have been the fastest growing source of employment. Less positively, maquiladoras have not succeeded in integrating with local industry nor have they reduced migration to the US or even significantly improved the living standards of those working in the sector.

The garment maquiladora studied in this thesis – Monty industries, Motul, Yucatán – offers a unique perspective on the assembly activities carried out in the country. The plant is located in the south of Mexico, in a rural area of one of the poorest and more indigenous states. Although most of the negative characteristics of the industry are present, the overall impact is quite positive and differs in many ways with what has been written about the industry in the north of the country.

Because jobs are distributed among a relatively small number of families, Monty has had a considerable economic impact and generated many economic spillovers. However, despite state legislation aimed at reducing the impact of pollution, Monty is a polluting plant that has not complied with the Mexican environmental norms.

TABLE OF CONTENTS

CHAPTER THREE: ACADEMIC CRITIQUES OF THE EXPORT MAQUILADORA INDUSTRY

CHAPTER FOUR: METHODOLOGY

CHAPTER FIVE: THE HISTORY OF MOTUL AND THE ECONOMIC IMPACT OF THE MAQUILADORA PROGRAMME FOR THE EX-HENEQUEN REGION

CHAPTER SIX: STRUCTURE OF THE MONTY WORKFORCE

CHAPTER SEVEN: THE SOCIO ECONOMIC IMPACT OF MONTY

CHAPTER EIGHT: THE ENVIRONMENTAL IMPACT OF MONTY AND THE MEXICAN GOVERNMENT APPROACH TO SUSTAINABLE DEVELOPMENT

CHAPTER NINE: OVERALL CONCLUSIONS

GLOSSARY

Alianza para la Producción: Alliance for Production.

ALTEX, Programa para las Industrias Altamente Exportadoras: Programme for the Export Industries.

Bancomext, Banco Mexicano para la Exportación: Mexican Export Bank.

BIP: Border Industrialisation Programme.

Canacintra, Cámara Nacional de la Industria de Transformación: National Chamber for New Industry.

Cetes, Certificados de la Tesorería de la federación: Federation Treasury Certificates

CNA, Comisión Nacional del Agua: National Water Commission.

CNIME, Convención Nacional de la Industria Maquiladora de Exportación: National Convention for the Export Maquila Industry.

Cocef, Comisión para la Cooperación Ecológica Fronteriza: Comission for Ecological Cooperation along the Northern Border.

Codef, Comisión Coordinadora del Programa Nacional de Desarrollo de las Franjas Fronterizas y Zonas Libres del País: Coordinating Committee for the National Development Plan for the Northern Border and Free Trade Zones.

Comisión Intersecretarial: Inter-agency Comission.

Conalep, Colegio Nacional de Educación Profesional Técnica: National Association for Professional Technical Education

CTM, Congreso de Trabajadores Mexicanos: Mexican Worker's Union.

DC: Developed Country

FDI: Foreign Direct Investment

Fobaproa, Fondo Bancario de Protección al Ahorro: Banking Fund for the Protection of Savings

Hacienda(s): Rural productive unit under a particular organisation scheme based on the exploitation of the manual work force by a land owner.

Henequén: Yucatecan crop that produces a fibre suitable for ropes, bags and other garments.

IMSS, Instituto Mexicano del Seguro Social: Mexican Institute for Social Security.

ISSSTE, Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado: Mexican Institute for Social Security and Social Services for State Workers.

LDC: Less Developed Country

LGEEPA, Ley General de Equilibrio Ecológico y Protección al Ambiente: General Law on Ecological Equilibrium and the Protection of the Environment.

Luz y Fuerza: Power and Energy.

Maquila (s): In-bond, assembly-plant (s).

Maquilador (a, es, as): Related to the assembly-plant industry.

Motuleño (s): Originally from Motul or assimilated to Motul.

Nafin, Nacional Financiera: National Finance.

Non-MW: Non-Monty Worker

Pemex, Petróleos Mexicanos: Mexican Oil.

PITEX, Programa para la Importación Temporal para Exportación: Programme for the Temporary Importing of Inputs for Final Export.

Profepa, Procuraduría Federal de Protección al Ambiente: Federal Law Enforcement Agency for Environmental Protection.

Profepa-Yucatán: Federal Law Enforcement Agency for Environmental Protection-Yucatán.

PROGRESA, Programa de Educación, Salud y Alimentación: Programme for Education, Health and Food.

PRONASOL, Programa Nacional de Solidaridad: National Solidarity Programme.

Sagarpa, Secretaría de Agricultura, Ganadería, Pesca y Alimentación: Agriculture, Livestock, Fishing and Food Agency.

SECOFI, Secretaría de Comercio y Fomento Industrial: Agency for Trade and Industrial Development.

Secretaría de Desarrollo Industrial y Comercial: Trade and Industrial Development Agency.

Secretaría de Desarrollo Rural y Pesca: Fishing and Rural Development Agency.

Secretaría de Ecología: Ecology Agency.

Secretaría de Economía: Economics Agency.

Secretaría del Trabajo y Previsión Social: Work and Social Security Agency.

Sedesol, Secretaría de Desarrollo Social: Social Development Agency.

Semarnat -Yucatán: Environment and Natural Resources Agency-Yucatán.

Semarnat, Secretaría del Medio Ambiente y Recursos Naturales: Environment and Natural Resources Agency.

Telmex, Teléfonos de México: Mexican Communications.

Tesobonos, Bonos de la Tesorería de la federación: Federation Treasury Bonds.

TNC: Transnational Corporation

Yucatecans: Originally from Yucatán or assimilated to Yucatán.

LIST OF TABLES

CHAPTER TWO

CHAPTER THREE

CHAPTER FOUR

CHAPTER FIVE

CHAPTER SIX

CHAPTER SEVEN

CHAPTER EIGHT

LIST OF FIGURES

CHAPTER TWO

CHAPTER THREE

CHAPTER FOUR

CHAPTER FIVE

CHAPTER SEVEN

INTRODUCTION

This thesis is concerned with the maquila in Mexico. Often called an in-bond plant in English, a maquiladora is a factory which assembles imported tax-free parts for subsequent export to developed countries. Maquila is the short name for maquiladora, and 'the' maquila is the noun derived from the verb *maquilar*. The term comes from the activities of millers, who ground someone else's grains and got paid in specie. Today, *maquilar* means assembling for further export. Maquiladoras either work under contract for Transnational Corporations (TNCs) or are directly owned by them. Such plants allow TNCs to take advantage of cheap labour in less developed countries (LDCs) and benefit the latter by creating jobs, mainly for those with low skills.

Maquila operations have become increasingly common since the 1980s, concentrating in countries like China, Mexico, Taiwan and Singapore, which are relatively close to major domestic markets and whose governments were prepared to accommodate the needs of major foreign investors. They now represent the fastest growing source of foreign direct investment (FDI) in some of the Newly Industrialised Countries (NICs).

Maquiladoras have been an important element in Mexico's regional development strategy since 1965 and have become a major national development tool since the 1980s (Fatemi, 1990; Kopinak, 1995; Wilson, 2002; Islas, 2004). In 2002, maquila production accounted for 48.5 per cent of Mexican exports and 49 per cent of the FDI, and it provided around 32 per cent of manufacturing employment in Mexico (Sotelo, 2004; INEGI, 2004). Since the crisis of 1982 the sector has grown steadily from 123,000 employees to its present proportions of more than 1.2 million today (2006), and from 620 plants to more than 3,500. In 2006, the maquila industry represented 10.5 percent of foreign income, and employed some 931,916 workers in northern border cities (Sotelo, 2004; INEGI, 2007). The maquila has arguably represented the most important rationale for the expansion of the cities along the country's northern border for quite some time (Young, 1986a; Gilbert, 1993; Gilbert, 1994a; Spalding, 1999; De la O, 2000).

For Mexico, therefore, maquiladoras represent the most visible face of the New Economic Model (NEM), a model that was rapidly implemented and that has drastically changed the country's economy (Gilbert, 1994b; Cypher, 2001; Salas, 2001; Kelly, 2001; Gwynne and Kay, 2004; Parrado, 2005; González de la Rocha, 2006). Maquiladoras have provided a considerable number of jobs and are an important source of foreign income. However, the environmental

impact of the maquila and the accelerated urban growth that it has brought (particularly in the 'maquila states' along the country's northern border), have made the Mexican government increasingly aware of the environmental damage that can be wreaked by rapid industrialisation and urbanisation (Sánchez, 1989; Mungaray, 1989; Gilbert, 1992; Gillbreath, 1992; Gilbert, 1994b; Bowen, Kontuly, and Hepner, 1995; Grossman, 2000; Liverman et al., 2002; Kopinak and Barajas, 2002; Montalvo, 2004).

Whether in urban or in rural areas, rapid economic growth and poverty have often damaged the natural environment either through pollution or through over exploitation of natural resources (Mumme, Bath, and Assetto, 1988; Mumme, 1992; Gilbert, 1994b; Simon, 1997; Grossman, 2000; Mercado and Fernández, 2002; Gwynne, 2004b). Although maquiladoras appeared in Mexico long before the North American Free Trade Agreement (NAFTA), it was only after it was signed that the environmental responsibilities of the government became a binding issue under international law (Mumme and Duncan, 1998; Marchack, 1998; Gutiérrez, 1999; Logsdon and Husted, 2000). Since 1994, therefore, the Mexican government has attempted to incorporate environmental issues into national development practice. Given its internationally proclaimed goals of 'sustainable development', Mexico's commitments have obliged policy-makers to try to couple environmental protection with economic growth and wealth distribution.

Of course, some would argue that the government's reliance on maquila development, while simultaneously wishing to encourage sustainability, is contradictory. After all, some of the major criticisms made of the maquiladoras refer to the environmental damage that they have brought to the northern border area, their limited integration with the national economy and their persistent reliance on low-skilled, low-paid labour (Fernández-Kelly, 1983; Young, 1986b; Stoddard, 1987; Sklair, 1988; Tiano, 1994; Kopinak, 1995; Cravey, 1997; García de Fuentes et al., 2000; Wilson, 2002; Kopinak and Barajas, 2002; Canto and Cruz, 2004).

This thesis sets out to investigate those issues through the following research question: is maquila development ever compatible with sustainability? In other words, have maquiladoras promoted sustained economic growth, improved labour conditions and wealth distribution, whilst protecting the environment? Rather than focus on, it might be argued, the over-studied north of the country, that question is examined with reference to the south. Using the example of a clothing maquiladora in the state of Yucatán, I examine how the different tiers of the Mexican government have sought to introduce a sustainable element into the development of a poor, mainly rural area of a state in which, until very recently, the main source of income was

tourism. The study also employs interviews with workers and managers of the Monty plant in Motul, to investigate how the development of one maquiladora has affected the regional economy, the environment and replaced the work market of an economically depressed part of Yucatán.

The Export Maquila Industry (EMI) in Perspective

Mexico's relations with its northern neighbour have often been described as a dynamic and unequal set of interactions with the biggest economy in the world: the USA. Its economic policy illustrates well some of the challenges that semi-industrialised countries have to face and the strategies that they have to develop in order to attract FDI and participate in world trade, while being seen to take measures to enhance social wellbeing and protect the environment (Gilbert, 1994b; Kelly, 2001; Zarsky and Gallagher, 2004; Gwynne, 2004a).

Foreign Direct Investment is currently the principal resource for development and the Mexican economy is particularly dependent on it, particularly following the implementation of the New Economic Model (NEM) (Cooney, 2001; see Fortanier and Maher, 2001; Sotelo, 2004; Gwynne and Kay, 2004). Maquiladoras have been financed with FDI for more than 40 years, and are usually owned by US companies or US entrepreneurs. As Mexico 'integrates' with the world economy, it comes as no surprise that the maquila has become one of the country's major sources of foreign income along with the revenues from oil, tourism and, more recently, the remittances from Mexican workers in the USA (INEGI 2005).

Over time, the EMI has developed in the centre and south, although it was first implemented as a regional development policy in the north of the country in 1965. It has been argued that the boom in the labour market along the northern border for more than two decades has resulted from the consolidation of global production and the failure of NAFTA to provide sufficient jobs. Because of their proximity with the USA, northern border states have been among the most important recipients of FDI, as opposed to central and southern states. Arguably, maquila development in the north has contributed to chaotic urban growth, environmental damage and, to some extent, social disruption (Gilbert, 1992; Gilbert, 1994a; De la O, 2000; Gilbert, 2004). Water pollution in the Rio Grande, the storage of industrial waste and rapid urbanisation processes have harmed soil, water and air (Sánchez, 1989; Gillbreath, 1992; Bowen, Kontuly, and Hepner, 1995; Kopinak and Barajas, 2002). These can be clearly linked to maquila activities and the massive flows of Mexican workers seeking job opportunities or migrating to

the USA (Young, 1986b; Stoddard, 1987; De la O, 1994; Spalding, 1999; De la O, 2000; Carrillo and Santibañez, 2001; Demetrios, 2002). Maquiladoras have also widened the economic gap between the north and south of the country.

The social, economic, urban and environmental impact of the maquila in northern Mexican states has been the subject of much academic debate since the 1980s. Since the Export Maquiladora Industry (EMI) became the principal development policy, the matter has been widely documented and discussed. As maquiladoras spread to the 'interior' and 'deep interior' of Mexico, they became a major source of employment. The lack of alternative development policies made it even more necessary to encourage maquila growth in order to provide jobs in the region and eventually Mexico.

Criticisms of the maquila industry have varied over time. Some have emphasised the negative social aspects derived from assembly factory work, and have questioned its capacity to integrate with local industry and modernise the workforce, while others have heightened awareness of the negative consequences of polluting maquiladoras. Despite the variety of studies, criticism of the industry has rarely been framed within the 'sustainable development' paradigm, perhaps because studies of the maquila began long before the term 'sustainable development' was coined. In general, the maquila has been studied separately by economists, sociologists and urban planners. These separate works do consider the social, economic, environmental and urban impact of the maquila from a number of different angles.

Case study analyses have focused on the characteristics of the workforce, their working conditions and the living standards that this type of job provides (Fernández-Kelly, 1983; Young, 1986b; Fernández-Kelly, 1989; Carrillo, 1989b; Tiano, 1994; Kopinak, 1995; Cravey, 1997; Carrillo and Santibañez, 2001; Wilson, 2002). Others have emphasised the aggregate economic aspect of the maquila. They have (broadly) measured job creation, noted changes in the characteristics of the workforce and emphasised the capacity of the maquila to attract foreign income (Barajas, 1989; Aron, 1989; Fatemi, 1990; Feenstra, 1997; Bair, 2001; Fleck, 2001). Some have focused on the evolution of assembly processes carried out by the different types of maquiladoras, mainly to justify their expansion (Menchaca and Solis, 1989; Trejo, 1989; Carrillo, 1989a; Carrillo, 1989b; De la O, 1994; Wilson, 1996; Carrillo and Hualde, 1996; Carrillo and Hualde, 1997; Bair, 2001; Ramírez, 2001; Castilla, 2002; Rivera and Maldonado, 2004; Montalvo, 2004; Castilla, 2004; Contreras et al., 2006). It is only recently that the environmental impact of the maquila has been studied in greater depth (Perry et al., 1990;

Gillbreath, 1992; Molina, 1993; Bowen, Kontuly, and Hepner, 1995; Marchack, 1998; Cooney, 2001; Liverman, Varady, Chávez, and Sánchez, 2002; Montalvo, 2004).

Advocates of the EMI tend to emphasise its capacity to supply jobs and, most notably foreign income, and see it as the best development option to facilitate integration with the world economy (Sklair, 1988; Wilson, 1996; Feenstra, 1997; Bair, 2001; Ramírez, 2001; Weiler and Zerlentes, 2003; Rivera and Maldonado, 2004). Promoters of the maquila industry were initially characterised as a reduced number of local entrepreneurs associated with the governmental apparatus, or policy-makers supporting the idea that the 'industrialisation' of the country via exports was the most effective, and perhaps the only, solution to Mexico's economic and social problems (Sklair, 1988; Sklair, 1993). Today, defenders of the EMI are generally in favour of economic liberalisation. Undoubtedly, supporting the EMI makes sense in the current era of neoliberalism and has been widely embraced by the entrepreneurial class in the USA and most policy-makers in Mexico (Silva, 2004).

On the other hand, opponents of maquila development have pointed out its limitations as a development strategy (Sklair, 1993; McCaughan, 1993; Pradilla, 1993; Barkin, 1998; Wilson, 2002; Mejías, 2002; Canto and Cruz, 2004; Sotelo, 2004; Colmenares, 2006). Several authors have demonstrated that maquiladoras are run with low-skilled labour and pay very low wages. To some critics maquila activities have established a new prototype for the 'ideal worker' in the country — non-unionised, docile and responsible. Such a model, it is argued, was shaped through the initial exploitation of young, inexperienced and manageable females who worked to bring in an extra income for their — usually large — families (Fernández-Kelly, 1983; Sklair, 1993; Kopinak, 1995; Cravey, 1997; Wilson, 2002; Zamorano, 2006).

In addition, they claim that host countries do not retain enough of the foreign currency generated by maquila activities, and that they have not engaged local industry in the productive chain as was initially proclaimed (Sklair, 1993; Cooney, 2001; Cypher, 2001; Salas, 2001). The transfer of technology seems to be extremely limited and the fact that maquila employers have a massive labour pool at their disposal suggests that real wages in the sector will remain low, and high turnover rates manageable (Kopinak, 1995; Ramírez, 2001; Wilson, 2002; Weiler and Zerlentes, 2003; Zarsky and Gallagher, 2004). It is also said that the world-wide competition for assembly activities and a dependence on favourable global economic cycles make the maquila a volatile provider of jobs and income (Dussel and Xue, 2005). In sum, far from enhancing development and integrating the national economy with global markets, it would appear that maquiladoras promote enclave economies.

FDI and the 'Sustainability' Debate

The discussions around the importance of FDI intensified following the generalised implementation of neoliberal policies in LDCs and, more particularly, after the liberalisation of financial flows. The debate centred on the capacity of FDIs to comply with 'sustainability' objectives. In the late 1990s, scholars from both the 'weak' and 'strong' 'sustainability' schools observed that the economic dynamism that followed the liberalisation of trade and finance had serious environmental, economic and social implications worldwide (Gilbert, 1994b; Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001; Mestrum, 2003; Pallemaertz, 2003; Gwynne, 2004a). The concern was whether liberalised trade and investment were complying with sustainability objectives, or whether they were actually perpetuating environmental depletion, income disparities, dependency and economic disarticulation in LDCs.

Most international economic organisations — the World Trade Organisation (WTO), International Monetary Fund (IMF), Inter American Development Bank (IADB) and World Bank (WB) among others — emphasise the compatibility of neoliberalism and 'sustainable development' (Bartelmus, 1994; Bryant and Bailey, 1997; Adams, 2002). However, sustainable development seems to be interpreted in different ways by different actors, and mainstream interpretations of the term are often criticised by hard line environmentalists.

In any case, it is not at all clear whether neoliberal measures[1] in Latin America (LA) have actually encouraged economic growth, wealth distribution and environmental protection (Gwynne and Kay, 2004). More generally, it is doubtful whether market-oriented policies go hand in hand with improved living standards and the protection of the environment, particularly in the case of semi industrialised LDCs (Friedmann, 1992; Gilbert, 1994b; Bryant and Bailey, 1997; Prugh, Costanza, and Daly, 2000; Gardiner, 2001; Fortanier and Maher, 2001). Therefore, not even in its most superficial interpretation have the goals of sustainable development been achieved.

International organisms such as the OECD and the UN, as well as some academic advocates of 'technocentrist' approaches, have identified serious failings and gaps in the neoliberal model to enhance sustainability (Zarsky, 1999; Prugh, Costanza, and Daly, 2000; Gardiner, 2001; Fortanier and Maher, 2001; World Bank, 2002; WB, 2006; OECD, 2007). The intense and

[1] That is, privatisations, government shrinking, fiscal management, an emphasis in macro-economic stability, and the opening of finance and trade.

rapidly growing industrial activity of some semi-industrialised and LDCs over the last two decades appears to have stemmed from the deregulation of finance and trade, and raises doubts as to whether it is a sensible approach to sustainable development (Zarsky, 1999; Fortanier and Maher, 2001). In LA, limited economic growth seems to be accompanied by a growth in absolute poverty, income polarisation and environmental deterioration (Gilbert, 2004; Gwynne, 2004b; Gilbert, 2007).

The debate among 'technocentrists' or 'weak sustainability' advocates is limited to the environmental impact of TNCs in host countries. The technocentrists appear to assume that industrialisation leads immediately to development and modernisation, ignoring the more complex relationship between nature and humankind, and the importance of respect for cultural diversity in order to implement alternative development programmes worldwide (Friedmann, 1992; Esteva and Prakash, 1992; Goldrich and Carruthers, 1992; Blaut, 1993; Bookchin, 1994; Beck, 1995; Beck, 1997; Barkin, 1998; Redclift, 2000; Sen, 2000; Chopra, 2001; Markandya, 2001; Mestrum, 2003).[2]

Some (mainstream sustainable developers) claim that cleaner technology and more friendly production processes are exported through TNCs, creating 'pollution halos' in host countries. Pollution halos are industrialised regions with low levels of pollution (such as Singapore) that result from the widespread use of clean technology initially brought in by foreign industries. With time, local industries are said to be forced to catch up and use more environmentally-friendly production processes in order to remain competitive. Opponents argue that, on the contrary, semi-industrialised and LDCs have become the main receivers of dirty industries, turning these countries into 'pollution havens' (Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001). Evidence gathered in different countries supports both arguments and is, overall, inconclusive and case determined.

Perhaps more importantly, the technocentrists rely on a free market approach to promote sustainable development. Corporate responsibility and consumer demand for 'green products' are expected to develop with very limited governmental intervention. The rationale behind such

[2] The reduction of the 'sustainable development' problematic to environmental protection is often criticised because it ignores the most relevant social and cultural aspects of development. Technocentrists are blamed for promoting a consumerist society, which resulted from the 'modernist' paradigm. A reliance on technology alone to resolve environmental issues would appear to be extremely limited and incompatible with the goals of sustainability. To eco-centrists, 'sustainability' is defined in opposition to the modernist paradigm of development. Sustainable development addresses the importance of the 'social', acknowledging the environmental and cultural loss that past modernist attempts entailed.

beliefs is that both producers and consumers are supposed to gradually change their polluting practices as environmental awareness grows and environmental costs are internalised. An optimal equilibrium between environmental protection and the use of natural resources should result from responses to market signals. These views are shared and promoted by the main international economic institutions (WB, WTO, IMF, OECD). For hardline technocentrists though, solutions might be based upon the regulation of FDI — by either 'home' or 'host' governments — in order to condition the participation of TNCs through a series of ad hoc norms (Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001).

The belief that market-oriented mechanisms are more effective than state intervention and harsh regulation is often contested. 'Strong sustainability' advocates emphasise the urgent need to change production and consumption patterns by replacing the modernist paradigm or at least by limiting its scope (Friedmann, 1992; Blaut, 1993; Bartelmus, 1994; Beck, 1995; Adams, 2002). They note the failure — under the NEM — to promote successful business projects with a more social approach, that respect local knowledge, needs and aspirations (Friedmann, 1992; Bartelmus, 1994; Beck, 1995; Bryant and Bailey, 1997; Redclift, 2000; Adams, 2002). Although both 'weak' and 'strong' sustainability advocates tend to emphasise the limitations of FDI as a 'sustainability' promoter, the vast differences in their criteria for appraisal and definitions with regard to their ultimate goals have led to a series of arguments and debates.

The Mexican Government and 'Sustainable Development'

Since Mexico entered the North American Free Trade Agreement (NAFTA), the government has been obliged to intensify its policy interest in sustainability, principally in terms of protecting the environment (Gilbert, 1994b; Mumme and Duncan, 1998; Gutiérrez, 1999; Spalding, 1999; Grossman, 2000; Liverman, Varady, Chávez, and Sánchez, 2002). The environmental clauses of NAFTA, in tune with the principles for the promotion of sustainable development in Agenda 21, forced the Mexican authorities to create new agencies[3] and establish mechanisms to regulate the most pressing environmental concerns. Thus, the Mexican government's approach to sustainable development is framed within the mainstream interpretations of the concept.

[3] Notably the *Instituto Nacional de Ecologia* (INE), *Procuraduria Federal de Proteccion al Ambiente* (Profepa), *Comisión Nacional del Agua* (CNA) and the *Secretaria del Medio Ambiente Recursos Naturales y Pesca* (Semarnap) (Mumme, Bath, and Assetto, 1988; see Mumme, 1992).

It is then no wonder that the development of environmental laws, regulations and government institutions has gone hand in hand with the development of the maquila in the country in its more recent phase (1990s onwards). Moreover, the recently created (1994) Secretariat of the Environment, Natural Resources and Fishery (Semarnap[4] during the last two presidencies of the PRI) and other — previously created — related offices (INE-PROFEPA) seem to be far from achieving their initial goals, let alone the more ambitious goals of hardline 'sustainable developers' (Mumme and Duncan, 1998; Barkin, 1998; Zarsky and Gallagher, 2004; Semarnat, 2006).

The efforts of those government bodies have been limited to developing policies to prevent environmental degradation (mainly the regeneration of forests and coastal estuaries); to protect the natural environment (by creating natural reserve parks and by developing legislation to control the commercial uses of land); and to control pollution (to protect air, soil and water) (Semarnat, 2006). Their very limited and temporary participation in the design of development or poverty reduction policies testifies to their superficial commitment to development. The lack of coordination among governmental agencies, and the absence of alternative policies to the maquila, demonstrates a clear neoliberal impetus that neglects the more ambitious goals of sustainability.

Moreover, the government's limited ability to monitor and protect the environment has been highlighted as a serious institutional weakness, resulting from the inadequate budget allocated to research, as well as the low human and technical capacities (Perry, Sanchez, Glaze, and Mazarp, 1990; Gillbreath, 1992; Bowen, Kontuly, and Hepner, 1995; Mumme and Duncan, 1998; Marchack, 1998; Liverman, Varady, Chávez, and Sánchez, 2002; Kopinak and Barajas, 2002; Navarrete and León, 2005). What is more significant is the fact that economic targets — as defined by the NEM — have been prioritised over environmental and social issues. The constraints of the global economic context have certainly limited and conditioned Mexico's development possibilities, but the lack of creativity on the part of the government would lead one to believe that the maquila policy has undermined other development possibilities.

The long-standing industrialisation policies of the 1930s to the 1970s, and the prominence of the EMI over the last two decades, have meant that alternative sources of development, particularly the rural ones, have long been neglected (Simon, 1997; Barkin, 1998; Kelly, 2001; Kay, 2004). As a consequence, Mexico's trade balance has shown increasing deficits,

[4] Renamed in the year 2000 (Fishery was taken out) and therefore now Semarnat.

particularly since the signing of NAFTA. Many Mexicans migrate, work in export manufacturing industries, join the informal economy or are unemployed or underemployed, and therefore have not improved their living standards (Fleck and Sorrentino, 1994; Gilbert, 1994b; Cooney, 2001; Ochoa and Wilson, 2001; Cypher, 2001; Salas, 2001; Zarsky and Gallagher, 2004; Chant, 2004; Parrado, 2005; González de la Rocha, 2006; Morris and Passé-Smith, 2007).

The NEM clearly opened the breach between rich and poor, to the point that Mexico has one of the most polarised societies in the world in terms of income (Robertson, 2000; Föster and Pearson, 2002; World Bank, 2002; OECD, 2007). The middle class has been shrinking for the past decade, more poor live in the cities, rural poverty is acute and migration to the USA remains high (Cooney, 2001; Ochoa and Wilson, 2001; Cypher, 2001; Salas, 2001; Föster and Pearson, 2002; World Bank, 2002; Gilbert, 2004; Parrado, 2005; González de la Rocha, 2006). Insecurity and institutional weakness have resulted from such economic disparities.

Although INEGI data do not register significant changes in employment rates, there is evidence to shows that employment opportunities have worsened in Mexico since the NAFTA was signed, particularly for more educated people and skilled workers (Robertson, 2000; Ochoa and Wilson, 2001; Parrado, 2005). Formal employment is often limited to low-skilled, low-paid employment and informal (urban) employment is often saturated and rarely allows reasonable living standards (Fleck and Sorrentino, 1994; Gilbert, 1994b; Salas, 2001; World Bank, 2002; Gilbert, 2004; González de la Rocha, 2006). In fact, a slight recovery in agriculture is explained by the scarcity of jobs in the cities and a steady rise in the cost of living (Cypher, 2001; World Bank, 2002; Zarsky and Gallagher, 2004; Parrado, 2005). Very few Mexicans have actually benefited from neoliberal policies (Robertson, 2000).

However, settlement patterns have changed for the better (Gilbert, 1993; Gilbert, 2004). The population is distributed in many more small, medium or large cities, thus consolidating Mexico's urban network (CONAPO, 2006). Demographic pressure in megalopolises like Mexico City and Guadalajara has been alleviated and commuting flows between town and country have intensified, thanks to an improvement in transport and communications (Gilbert, 1993; Gilbert, 2004).

Given the limited performance of the Mexican economy over the last two decades, it seems necessary to explore further the impact of the maquila in order to make more accurate predictions with regard to what the NEM might bring to Mexico in the years to come.

'Sustainable development' principles and aspirations can provide a useful framework through which to judge the impact of the maquila and to draw up alternative development policies.

Principal Aims of the Thesis

The principal aim of this thesis is to provide further evidence and contribute to the debate on the impact of the maquiladoras. In this way, I will discuss whether the current model of development in Mexico is compatible with the (at least mainstream) principles and objectives of sustainability. I will limit the objectives of sustainable development to environmental protection, economic growth and wealth distribution. A case study approach was chosen to study the impact of a major maquiladora in a rural area in the south of Mexico. The south of Mexico has fewer maquiladoras than the north and has consequently been studied much less. It is also generally a more rural, traditional and indigenous area and therefore the environmental and social impacts of a maquiladora are likely to be much greater than in the north.

The case of Yucatán was chosen because it closely reflects the situation in many other rural areas of Mexico — unemployment, poverty, high rates of infant mortality, abandonment of the land, migration — and shows the efforts of federal, state and local governments to implement a development policy in accordance with the NEM and showing a commitment to the protection of the environment. Furthermore, the case considered is a non-industrialised small city, enabling me to establish significant differences between the impact of the maquiladoras in the north and the south, and therefore to examine the 'sustainability' of the expanding maquila activities in both urban and semi-urban contexts.

Expanding on these ideas, my thesis examines the economic, social and environmental impacts of the largest clothing maquiladora operating in the ex-henequen region.[5] The main questions that my research set out to answer are:

- How does the rural maquila differ from the maquila in the north?
- Who are the workers of the 'rural' maquila? What is the structure and composition of their families? How are they organised? How do they feel about factory work?

[5] A region in the Yucatán peninsular devoted to the cultivation and transformation of the henequen for export to the USA. More detail is given in Chapters Four and Five.

- Have living standards improved since maquila operations started in that region? How have the main economic indicators of the region changed after the implementation of the maquila policy? Has migration improved?
- Are there visible changes in the social dynamics and customs of the indigenous, rural society?
- How has the state government dealt with the environmental aspects of the maquila in Yucatán? Is the maquila in the ex-henequen region polluting?

The Yucatecan case can also shed light on the future impact of the major regional development plan 'Plan Puebla-Panamá', in which maquila development is projected for rural areas from the centre of Mexico to Central America. The results will provide evidence for a broader discussion on the viability of an export-led development strategy for the whole region.

The State of Yucatán

Yucatán is the only southern state with substantial numbers of maquiladoras and was therefore the obvious choice for this study. The maquila policy in Yucatán commenced in the mid-1970s with just a few maquiladoras located in Mérida, the capital city of that state. In the mid-1980s, a policy of maquila development was implemented as a solution for rural areas in decline and sought in its design to avoid the errors and pitfalls of the maquila experience of the north (in particular, pollution and urban congestion) (Special Report, 1984; Castilla and Torres, 1999). The 'rural maquila' was designed and planned as an ad hoc model, which also set it apart from the more technical maquiladoras of Mérida (Albornoz, 2000).

The south of Mexico is very different from the north. It is a predominantly rural region and most of the people in rural Yucatán are Mayan in origin (Moseley, 1980; Patch, 1993; Restall, 1997; Brannon and Gilbert, 1999; Gugliotta, 2007). Motul is located in what was formerly a henequen area. The henequen industry was based on a *hacienda* system and its development shaped the modern economic and social history (from the mid-nineteenth century to the present) of the state (Villanueva, 1984; Wells, 1985; Brannon and Baklanoff, 1987; Vázques Pasos, 1999; Reed, 2001; Gabbert, 2004). Henequen monoculture lasted for more than 100 years and determined much of the economic and social relations between the Yucatecan Mayans and the *criollo* population (Wells, 1985; Patch, 1993; Gabbert, 2004). The remaining rural population — many migrated to the cities — is scattered among small communities (municipalities and '*comisarías*') within the limits of several ex-haciendas confiscated in the 1930s (Vela, 2002; Gabbert, 2004). Most of the population worked in agricultural jobs until the 1980s, when they

left rural jobs to work as builders or in the service sector, and since 1995 in maquila jobs (Special Report, 1984; García de Fuentes and Morales, 2000; Canto, 2001; Vela, 2002).

Patterns of permanent and circular migration within and outside the state — and, more rarely, to the USA — reveal the scarcity of job opportunities for rural Mayas. The building of Cancun, the food industry in Mérida and the development of services associated with the tourist sector offered partial solutions for young rural men, but these options eventually declined or became insufficient (García de Fuentes and Morales, 2000; Castilla and Torres, 2000; Canto, 2001; Vela, 2002). In response to that situation, the government sought alternative strategies to keep people in place and the 'Maquiladora Programme for the Ex-henequen Region' was the cornerstone of that policy. The strategic location of maquila plants represented an attempt to prevent or attenuate emigration and commuting flows to neighbouring cities (mostly Mérida and Cancun).

Studies concerning the rural maquiladoras of Yucatán are scarce despite the fact that they represent a relatively new and original form of maquila development in Mexico, and that they are specifically addressed at rural people (Albornoz, 2000; Canto, 2001; Castilla, 2002; Castilla, 2004; Labrecque, 2005). The case of Yucatán is also distinctive in that the state government decided to attract 'non-polluting' plants. However, the garment sector, which was found the most suitable for the ex-henequen region, sometimes carries out dying processes and could be a potential polluter should dying or bleaching processes be carried out by the plants.

Since the state's only industrial activity was concentrated in Mérida, the rural maquila policy presents a good example of a state in which the environmental impact of maquiladoras can be examined. Moreover, the small city of Motul, in the centre of the state, was selected as a prototype through which to examine how a rural area is likely to be affected by new maquila developments. With the political shift from the 'Institutionalised Revolutionary Party' (PRI) to the 'National Action Party' (PAN) — in the state and local governments in 2001 and 2002, respectively — this study can shed light on how the maquila policy has been followed by an administration in transition.

Structure of the Thesis

Chapter One provides the framework for the subsequent analysis, summarising the main debates on sustainable development and the impact that FDI has had as a promoter of 'sustainable development'. Chapters Two and Three review the contested history of maquila policy in

Mexico and the criticisms levelled at the policy in the academic literature. I describe the evolution in the implementation of structural adjustment policies culminating in the total implementation of an export-led development strategy under the NEM. Chapter Four details the methodology used to define the case study and data collection.

Chapter Five outlines the history of Motul and puts the rural maquila policy of the state of Yucatán into context. It also describes the changes that have taken place in the economy and the demography of the region (where the workers live) over the period 1990–2005. Economic and demographic comparisons are made between Yucatán and the major northern 'maquilador' states to emphasise the prevailing semi-rural character of Yucatán and the former henequen region. Chapter Six describes the characteristics of the Monty workforce. I make comparisons between my data and the characteristics of northern maquila workers found in the literature. Chapter Seven gives details on the family composition and structure of Monty workers and examines the socioeconomic impact of Monty on the area. Chapter Eight considers the environmental impact of Monty and government environmental and developmental policy. Overall conclusions are drawn in Chapter Nine.

Chapter One

THE SUSTAINABLE DEVELOPMENT DEBATE

Introduction

It has been claimed that the goals of achieving a fairer distribution of wealth and reconciling economic growth with the protection of the environment are among the most pressing global political challenges today (Bruntland, 1987; Bartelmus, 1994; Elliot, 1994; Bryant and Bailey, 1997; Redclift, 2000; Sen, 2000; Chopra, 2001; Markandya, 2001; Leff, 2002; Adams, 2002; Connelly and Smith, 2002; Pallemaertz, 2003; Seema, 2004; András and Láng, 2005). In just 50 years, our lifestyles have changed more than they had in the previous two centuries (Bookchin, 1994; Beck, 1995; Beck, 1997). Humankind is more capable than ever before of shaping its immediate environment and manipulating nature at will (Bryant and Bailey, 1997). Science and technology have been developing and diversifying so fast that it is difficult just to keep track of the latest scientific discoveries and technological gadgets. The human population has grown considerably, as has life expectancy, in part due to advances in medicine, and certainly because living standards have also shown a general improvement (Markandya, 2001; Seema, 2004; UN, 2007).

Today, almost half of the global population lives in cities and the movement of people within and between countries has never been greater (Population Information Program, 2000; Gilbert, 2004; UN, 2007). Communications have evolved dramatically and continue to do so. Worldwide production, businesses and trade are more dynamic than ever (US Agency for International Development, 1998; IMF, 1999; WTO, 2003; OECD, 2007). It appears that the world as we know it is changing fast, and will continue to do so. However, all that seems to have come at a price.

Despite global economic growth, poverty and social exclusion are acute in many parts of the world, and certainly in Latin America (LA) (Elliot, 1994; US Agency for International Development, 1998; Robertson, 2000; Chopra, 2001; Föster and Pearson, 2002b; Gilbert, 2004; Gwynne and Kay, 2004b; WB, 2006; Gilbert, 2007). Although living standards have improved overall, some parts remain underdeveloped and as poor as in the past (Elliot, 1994; WB, 2006; Gilbert, 2007). Others have modernised and grown, or endured economic crises, but wealth is

not evenly distributed and nor is human or financial capital (WB, 2006; OECD, 2007). Private corporations have never been so powerful and influential.

In many semi-industrialised and LD countries opulence and extreme poverty co-exist. Social and political unrest have developed alongside, particularly in the less developed and developing nations, where income polarisation is acute, and where the economies depend on foreign investments or are over reliant on strategic primary resources. In LA, government transitions in Brazil, Venezuela, Mexico, Bolivia, Colombia, Ecuador and Peru have been accompanied by civil uprisings or protests. But perhaps the most unsettling result of processes of economic globalisation is the damage that is inflicted on the environment (Bruntland, 1987; Elliot, 1994; Redclift, 2000; Markandya, 2001; Connelly and Smith, 2002; WB, 2006). Arguably, humankind is only now beginning to understand the complexity of nature and how vulnerable and interrelated our ecosystems are (Bruntland, 1987; Elliot, 1994; Seema, 2004).

Only relatively recently have the scientific community (biologists, chemists, physicists and those working in related disciplines) attempted to develop an integral vision of the environmental implications of a rise in economic wealth. The natural scientists are learning about the dynamics of nature and the consequences to the ecosystem of anthropogenic activities. Social scientists too have been concerned with the matter, and have focused their analysis on the social and political aspects of human damage to the environment and its social and political implications. In theory, a different model of development is possible.

'Sustainable development' would reconcile economic growth and development with care for the environment and wealth distribution. However, as we will see, the idea of sustainable development has incurred more controversy and debate than practical solutions. What is more, the principles and spirit of sustainability seem to have had a very limited impact in practical terms (Bartelmus, 1994; Bryant and Bailey, 1997; Adams, 2002; Pallemaertz, 2003).

This chapter outlines what I consider to be the most relevant debates around the idea of sustainable development. I focus on the aspects that I believe could be useful to evaluate the maquila policy in Mexico, to interpret the data from my case study and, particularly, for my interview analysis. Although the concept of sustainable development raises more questions than answers, some of the conceptual and theoretical considerations presented here provide useful parameters for the data analyses and interpretations.

After the term sustainable development was coined by the Bruntland Commission of the UN in 1987, it was rapidly assimilated into the international political jargon (Pallemaertz, 2003; András and Láng, 2005). The first section of this chapter concentrates on the history of the concept and the reasons why it became so popular. It also stresses some of the conceptual limitations of 'sustainability' as defined by the Bruntland Commission. Section two introduces the debate between rich and poor countries and, therefore, the international political aspects of sustainable development and the major criticisms that the concept has been subject to. The tensions between the north and the south on sustainability issues show how different understandings, goals and means among countries often result in conflicting views on what development should mean.

In section three I examine the academic origins of the concept and emphasise the importance of Third World Political Ecology as a specialised branch within the social sciences that analyses the social and political aspects of sustainable development. It is important to examine the principles and evolution of Third World Political Ecology because these form the theoretical and methodological foundations of my work. As we will see, the current strand of Third World Political Ecology highlights the benefits of case study analyses and the need to provide empirical evidence that can shed some light on the social, economic and environmental impacts of transnational corporations (TNCs) in developing countries.

Section four presents the main debates found in the literature on foreign direct investment (FDI) and sustainable development. The purpose of this section is to present the arguments found in the (limited) literature on FDI and sustainability. Although the tension between FDI and sustainable development should be explored in greater depth (given the increasing importance of FDI for development), most of the literature on FDI analyses its impact from a traditional (mainstream) development perspective (that is, as established before the idea of sustainable development came to the fore). As we will see, for the most part discussions on FDI and sustainable development have been the domain of the so-called 'soft environmentalists'.

Soft environmentalism or mainstream sustainable development thinking is often linked in some way to the main international economic institutions (the WB, WTO, IMF, and OECD among others). Furthermore, the debates on sustainability within these institutions are often limited to discussions regarding the polluting impact of TNCs in LDCs and their capacity to push for the modernisation of local industry (or to raise environmental standards in host countries). Little attention is given to the social aspects of sustainable development. A review of this literature is

important in order to interpret findings on the environmental impact of the maquiladora I chose to study.

The final section (section five) is about the more general impact of FDI on the economies of LDCs — from a traditional development perspective. This section will serve to highlight the most common forms of praise or criticism directed towards FDI and, therefore, will indirectly provide a framework through which to evaluate the developmental impact of the maquila in Mexico. As we will see, most of the pros and cons of FDI found in this section are examined more thoroughly in the chapter on the 'Critiques of the Maquila Industry' (Chapter Three).

1.1 Sustainable Development as a Global Paradigm and an International Discourse

The idea of 'sustainable development' has been subject to intense debate since the Bruntland Commission of the United Nations (UN) first coined the term in their 1987 report 'Our Common Future' (Redclift, 2000; Markandya, 2001; Pallemaertz, 2003; András and Láng, 2005). The subsequent Earth Summit (held in Rio de Janeiro in 1992) represented an attempt to discuss the views expressed in 'Our Common Future' and find ways to put them into practice. This process gave birth to the so-called Agenda 21.[1] Different actors (the media, governments, NGOs, academics and civil society) were concerned by the description of the global environmental damage included in the Bruntland Report, and have sought practical solutions to repair that damage. The overall picture given in 1987 was alarming and unique. The consequences of resource over-exploitation had never before been presented so realistically, nor did any other report of its kind have had such a profound and lasting impact.

The Commission concluded that there is a clear and measurable degradation of the biological systems that support life on the planet and that this degradation is a clear consequence of human activities related to production processes and consumption patterns. Industrialised, semi-industrialised and rural societies were all found to be responsible for polluting and exploiting the natural environment. Both poverty and affluence were said to be the driving forces behind the economic activity that wreaked havoc on the environment (Bruntland, 1987). Therefore, the Commission appropriately made the distinction between the pollution of poverty and the pollution of affluence, in order to differentiate the nature of the problem between rich and poor

[1] Several conferences and world summits have been held since. The global issues that have been discussed within the framework of sustainable development have included demographics, urbanism, health and gender, among others. For further details see: http://www.un.org/esa/sustdev/documents/agenda21/index.htm.

countries (Bruntland, 1987; Bartelmus, 1994; Redclift, 2000; Sen, 2000; Chopra, 2001; Markandya, 2001; Adams, 2002; Pallemaertz, 2003).

For the first time complex data sets and multidisciplinary scientific approaches were used to describe and explain global changes and large-scale cycles of degradation of the earth. Global warming, the depletion of the ozone layer and forests, land degradation, water pollution, the loss of bio-diversity and a general over-exploitation of resources were highlighted as specific and urgent concerns (Bruntland, 1987; Seema, 2004). However, despite the effort to show factual evidence in the clearest ways possible, the Bruntland Commission has been criticised for deliberately coming up with a concept (sustainable development) that is open to numerous interpretations (Bryant and Bailey, 1997; Redclift, 2000; Sen, 2000).

The Bruntland Commission stressed that along with global environmental degradation came the deepening of social and economic disparities, which, in turn, exacerbated the vicious cycles of poverty and a concentration of wealth both at the world level and within the individual countries. However, it is possible that one of the reasons why the Bruntland Commission did not outline practical solutions, nor indicate the different levels of responsibility among the agents that caused such perverse dynamics might have been to avoid the political complexities that would come from the recognition of such disparities (and the mechanisms that caused them).

Given current levels of consumption, demographic growth and human technological capacity, the charge put on natural resources was presented as having reached its absolute limits (Bruntland, 1987; Sen, 2000). Such a view ultimately favoured the creation of a new concept, or at least a discourse within the international community. The idea of sustainable development paved the way for a whole new series of literature, academic debates and political discussions.

According to the Bruntland Commission definition, sustainable development is: 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs' (Bruntland, 1987: 43). Based on such a general definition, sustainable development was understood primarily as an ideal that suited the aspirations of all. The term soon came into common use. It began to be cited in academic and political seminars and conferences related to development issues, economics, the conservation of nature, social development and international politics. Thus, sustainable development rapidly became the new

development paradigm (Redclift, 2000; Sen, 2000; Chopra, 2001; Markandya, 2001; Adams, 2002; Connelly and Smith, 2002; András and Láng, 2005).

It did not matter that the concept was mainly expressed as an aspiration for a better future, nor that it stressed the need to take action to redress the problems of environmental damage and wealth distribution, without the need to restrain economic growth (Bartelmus, 1994; Bryant and Bailey, 1997; Adams, 2002; Mestrum, 2003; Pallemaertz, 2003). The capacity of the term to incorporate social, economic and environmental values in a harmonious way (without pointing to specific restrictions and limitations) is both its strength and weakness.

For many, the Commission's views were ambiguous because they promoted a belief in the possibility of resource exploitation without adverse environmental side-effects. The intention behind the term 'sustainable development' was to incorporate 'the ethical, the humanitarian, the scientific/environmentalist and the pragmatic' in one sole concept. Sustainable development aimed to respect nature and the community, to improve human living conditions, keep the exploitation of natural resources within the earth's capacity, and provide for a national framework to integrate development and conservation (Adams, 2002: 415).

Company chairs, NGO activists and politicians alike used the term indiscriminately, for sustainable development encompasses a vast range of hopes and ideals. From radical environmentalism to 'green corporate capitalism', sustainability was the order of the day. Soon, the abuse of the term rendered it vague and, for the most part, meaningless. Different advocates have used it to mean different and sometimes even opposing things, or simply to shape a fashionable (pertinent) corporate or political image.

The appropriation of the term by a growing number of actors made it even more difficult to define and understand sustainability without ambiguity and with any consistency. As Adams puts it: 'Both radical environmentalists and conventional development policy pragmatists have seized the phrase and used it to express and explain their ideas about development and environment. In the process they have created a theoretical maze of great complexity (...). The superficial conformity of writing and thinking about sustainable development hides very real and fierce battles behind the scenes over meanings' (Adams, 2002: 413).

Diverse views and positions regarding the diagnosis of the human-inflicted damage to the environment, the measures to cope with it and the earth's capacity for regeneration coexist

under the same label. Contending views are held in local and global political arenas, and have created social networks of international and national activists, academics and policy-makers that debate on different data, types of analysis and lines of action.

As Seema (2004) clearly points out: 'The absence of a consensus on the definition of sustainable development is perhaps inbuilt in the concept itself given that (...) sustainable development is an oxymoron emphasising both "to sustain" and "to develop", and therefore prioritising one or the other yields very different results. The practical consequences of the conflict on development (growth) versus environmental sustainability is that little progress has been actually achieved in reconciling these two objectives.'

No definition of sustainable development offers an unequivocal line of action, or even a systematic approach for diagnosis. According to Adams (2002), sustainable development was particularly attractive to the academic world because it urged scientists to engage in 'new joined-up research', and promised to bring together different disciplines, 'breaking down the barriers between academic knowledge and action'. But mostly, it seduced political leaders because sustainable development promises to alleviate poverty while limiting environmental degradation, 'without affecting anyone's interests'. Even corporate profits or share values could be maintained. Sustainable development implied win-win-win solutions across environment, society and economy; 'perfect for the decade of the televised soundbite and the spin doctor' (Adams, 2002: 413).

The notion of sustainability broadened as academics sought to incorporate growing numbers of actors and causes. It opened up new research fields and fomented interdisciplinary partnerships and discussions in the academic world (Leff, 2002; Connelly and Smith, 2002). This led to a more critical and thoughtful series of interpretations, resulting from the ongoing debates among scholars, grass-roots environmentalists and even government representatives. They emerged as a reaction to the abuse of the term and as part of a search for a better definition (Leff, 2002).

The distinction between 'technocentrist' and 'ecocentric' approaches was drawn once a large and diverse literature had emerged. Technical solutions such as the use of clean technology, better environmental planning and law enforcement lie within the technocentrist or 'weak sustainability' perspective (Markandya, 2001). For others, sustainable development implies more radical changes to the economy and society and new attitudes towards nature. Ecocentric or 'strong sustainability' advocates believe in zero growth or local self-sufficiency and a

recognition of the rights of other species (Redclift, 2000; Sen, 2000; Markandya, 2001; Leff, 2002; Seema, 2004). Up until the present, strong and weak sustainability advocates are the two extreme ends of the spectrum over which the debate on sustainability takes place.

Country delegations have agreed that changes need to be implemented, but little has been done to define the nature of the changes that countries would have to make in to solve or attenuate the problem (Bartelmus, 1994; Sen, 2000; Adams, 2002; Mestrum, 2003; Pallemaertz, 2003; Seema, 2004). Rich and poor countries are far from agreement on the necessary measures to tackle pollution and regulate resource overexploitation. Perhaps that is why it is often said that the greatest achievement of the Bruntland Report was merely to favour a dialogue on the environment and development issue among the majority of members of the international community (Pallemaertz, 2003).

[illegible] representatives, non-governmental organisations, academics and opinion leaders have participated in an effort to create consciousness on how to exploit, conserve and distribute the earth's resources in more responsible ways, but no definitive conclusions have been reached (Bartelmus, 1994; Sen, 2000; Adams, 2002; Mestrum, 2003: 50). As was the case with the Bruntland Report, the impact of Rio has been generally assessed in terms of its capacity to address global environmental issues, but most of all, for providing a framework for state and non-state actors to argue about these issues in an open way (Bartelmus, 1994; Markandya, 2001; Mestrum, 2003; Pallemaertz, 2003).

Far from achieving ground-breaking results, the UN Framework Convention on Climate Change (1992), the Earth Summit of 1992 and later the Kyoto Protocol of 1997 fuelled further debates and criticism, as well as more radical solutions and interpretations of the underlying causes of global environmental degradation. The recently published Stern Report adds to the series of documents alerting readers to the serious environmental consequences of global warming and the increasing economic costs of repairing such damage (BBC, 2007).

Of course, the Mexican government, like most governments, has shown support and agreed to endorse the principles and aspirations of sustainable development. However, despite an expressed commitment to sustainability, Mexico's government institutions re-shaped only after the NAFTA treaty was signed, and then mainly with a view to environmental protection. Like most international economic agreements, the NAFTA included environmental clauses to which the signatory governments made a commitment when signing the treaty. NAFTA has certainly

pushed the Mexican government institutions to show a firmer commitment to (weak) sustainability objectives (Mumme, Bath, and Assetto, 1988; Mumme, 1992; Mumme and Duncan, 1998).

Despite several declarations of interest in protecting the environment (while simultaneously recognising the need for economic growth and wealth distribution), the situation with respect to the environment (and wealth distribution) in Mexico has not visibly improved for at least a decade (Gillbreath, 1992; Simon, 1997; Mumme and Duncan, 1998; Gutiérrez, 1999; Grossman, 2000; Logsdon and Husted, 2000; Mercado and Fernández, 2002; Liverman et al., 2002; Gwynne, 2004b; WB, 2006). Quite the opposite, the resources and budget allocated to protecting the environment have substantially diminished since the crisis of 1994, and Mexico's economy has been underperforming ever since (Mumme and Duncan, 1998; Zarsky and Gallagher, 2004).

What is more, an increasing reliance on the Export Maquila Industry (EMI) has arguably meant that the Mexican economy has become more dependent on imports from the USA (including agricultural products), with local industry showing little signs of integration with the world economy (Robertson, 2000; Ochoa and Wilson, 2001; Cypher, 2001; Salas, 2001; Kelly, 2001; Zarsky and Gallagher, 2004; Parrado, 2005; Morris and Passé-Smith, 2007). Mexico's capacity to produce its own food has been significantly diminished by the NEM (Barkin, 1998). In addition, it is far from clear how environmentally friendly the maquiladoras are, or the extent to which they have brought any improvements in the living standards of Mexico's working class (Sánchez, 1989; Mungaray, 1989; Kopinak, 1995; Zarsky, 1999; Cooney, 2001; Wilson, 2002; Mercado and Fernández, 2002; Montalvo, 2004).

Therefore, sustainable development in Mexico seems be a long way off, despite the recent governmental efforts to get environmental concerns on the political agenda. The interviews with Mexican officials on sustainable development policy conducted for the purpose of this research will give a clearer picture of how they intend to harmonise Mexico's economic policy with the goal of sustainability and how they actually interpret the principles and objectives of sustainable development.

1.? Sustainable Development and the 'North/South' Political Debate

As the debate over how best to attain sustainable development continues, the political positions on how rights and responsibilities might be delegated have become polarised and may now be seen as a North/South, as well as an academic, issue. Through the global discourse of sustainability, governments have sought to redefine and justify their economic and social policies, while acting to strengthen governmental regulations to assure environmentally-friendly production processes. In many cases, countries have little option but to feign accordance with the discourse on sustainability, or compliance with environmental regulations. This is particularly true for countries with weak political institutions and where economic and social issues are most pressing.

It would seem that this is also the case for semi-industrialised countries that signed international treaties or joined international organisations, which oblige members to put environmental regulations on their political agendas (as is the case with Mexico). Since Rio 1992, most regional economic treaties have included environmental clauses (among others, NAFTA and MERCOSUR), and organisations such as the UN, the OECD, the WTO and the WB have pushed countries (at least in paper) to implement more environmental regulations.

Therefore, in developing nations, where there is a more urgent need to promote economic growth and a fairer distribution of income, the sustainable development discourse acquires a special relevance. The task of incorporating sustainable elements appears to be more complicated when one considers the imposition of the neoliberal structure at a global scale, and the pressure on semi-industrialised countries to 'get on board the merry-go-round' that is economic globalisation. Furthermore, environmental assets are still relatively abundant in Third World countries, and most countries depend on the exploitation of those resources to develop or 'integrate' with the world economy — particularly in LA (Gwynne and Kay, 2004a; Gwynne, 2004b).

For example, one of most pertinent political debates related to sustainable development in the international arena is over the difference in goals between rich and poor countries. The latter claim their right to develop (notably Brazil, China and India), while the former insist that the need to protect the environment should be paramount, albeit at the cost of industrialisation. These opposing views have resulted in different understandings, strategies, goals and means

among countries, as well as uneven levels of commitment or capacities to attain the objectives of sustainability.

The fierce international debate was rooted in a deep sense of suspicion among members from the LDCs that they were being asked to relinquish control over the management of their natural resources (Adams, 2002: 415). For them, the protection of the environment seems to have taken priority over their own developmental needs. According to Bartelmus (1994), the greatest concern in LDCs is to restore and protect land, soil, water and forests, because these represent the principal sources of food and energy. Other vital concerns include the marginal conditions in human settlements, natural disasters and other maladies associated with the environment.

On the other hand, the Developed Countries (DCs) have emphasised the need for tougher regulations to tackle the problems associated with air, land and water pollution, and are particularly concerned with climate change and the depletion of the ozone layer (Bartelmus, 1994; Seema, 2004). Semi-industrialised countries (for example, Mexico, Brazil, China and India) straddle both positions.

Furthermore, the DCs tend to highlight the problems of the south, including the impact of growing population, the uncontrolled growth of cities and the depletion of natural landscapes, vulnerable lands and forests (Bartelmus, 1994). LDCs argue that such processes are a consequence of the activities that have been undertaken in an effort to alleviate poverty. For them, economic growth seems to be a higher priority than the protection of the environment. What is more, natural resources are often exploited by local elites (or TNCs), with the compliance and support of local governments (Bartelmus, 1994; Bryant and Bailey, 1997; Adams, 2002; Gwynne and Kay, 2004a).

The debate between North and South has become one about sovereignty and self-determination, to the extent that developing countries advocate for their right to decide what is done with the resources under their jurisdiction, and have refused to bow down to international opinion (Adams, 2002: 418). The different interpretations of how to apply sustainable measures have polarised the 'technocentrist/ecocentrist' debate.

Most activists in LDCs promote ecocentric perspectives, given a complex set of characteristics that together constitute favourable grounds to promote traditional values and knowledge. The depletion of environmental assets in the battle against poverty, rapid and uncontrolled

industrialisation and urbanisation, and the strong presence of indigenous societies have led to more radical views on sustainability (Esteva and Prakash, 1992; Barkin, 1998; Sen, 2000).

For some, the transfer of environmental technology and 'know-how' is of particular importance in any effort to replace traditionally destructive attitudes towards nature with alternative, sustainable solutions (Bookchin, 1994; Faust, 2001). Most ecocentric developers and activists in LDCs stress the need to find ways to avoid repeating the industrial model of development that was typical of western societies and to integrate indigenous marginal groups in a sustainable way (Friedmann, 1992; Esteva and Prakash, 1992; Prugh, Costanza, and Daly, 2000). LDCs have become a battleground for some green radical NGOs, scholars and activists eager to demonstrate that different kinds of development are possible (Friedmann, 1992; Esteva and Prakash, 1992; Barkin, 1998; Prugh, Costanza, and Daly, 2000; Sen, 2000; Pallemaertz, 2003).[2]

On the other hand, the task of implementing sustainable development measures became particularly controversial in the context of financial and trade liberalisation and corporate expansion. The liberalisation of commercial and financial markets, as well as the promotion of free trade agreements between countries, left little room for government planners to devise alternative development strategies that would potentially exclude them from the globalised world economy. For at least two decades, international trade agreements and export-led models of development have been prioritised by most governments, and the need to join institutions like the WTO or have access to the financial benefits of the World Bank and IMF have lain at the heart of medium to long-term economic objectives. Mexico offers perhaps the best example of such dilemmas.

Is 'integration' to the world economy the best policy (for semi-industrialised and LDCs) in order to boost social and economic development while caring for the environment? Or should a new strand of alternative development programmes be promoted instead: one that is more closely linked to local interests and idiosyncrasies? These could be the two questions at either extreme of the technocentric/ecocentric debate, which lie at the core of the 'Third World' development problematic today. In the case of Mexico and for the purpose of this thesis, the central question will be: do the EMI and NAFTA offer real solutions to promote more sustainable ways and means for development?

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[2] There is a varied agenda debated by NGOs with differing degrees of influence and power. It has been recognized that NGOs from DCs have much more influence in the international lobby, raising the profile of issues such as the conservation on nature, anti-nuclear energy and, more recently, genetically modified food and crops.

In general, governments and international institutions tend to favour technocentrist approaches, while grass-roots and NGO activists support more 'ecocentric views' on development. The general perspective of hardline environmentalists is that export-led economies and market-driven decisions are *a priori* incompatible with the goals of sustainability.

In most cases, the very recent and accelerated phase of industrialisation is perceived as a direct threat that has disrupted more sustainable economic means and options, as well as traditional knowledge and values consistent with the co-habitation of humankind with nature (Esteva and Prakash, 1992; Barkin, 1998; Redclift, 2000; Sen, 2000; Chopra, 2001; Markandya, 2001). The transition from patterns of rural to urban settlement is perceived as a negative symptom. But mostly, it shows how few opportunities rural peoples have to survive in a rural environment (Barkin, 1998; Gilbert, 2004; Gwynne and Kay, 2004a).

On the other hand, soft environmentalists have a determinist view of social development. They believe that industrialised and market-oriented societies, under the liberal-democratic model, are the best (sometimes even only) option for progress or the manifestation of it. Therefore, the consumerist society is, *a priori*, likely to be exported all over the world. Soft environmentalists support the idea that environmental damage can be limited and controlled through improved management and technology, without the need to limit economic growth and consumerism. It was perhaps to overcome these very differing views that the Bruntland Commission defined sustainable development as it did. Only by embracing a vague definition could the competing interests of the North and the needs of the South appear compatible.

The most common criticism of the Bruntland Commission's definition of sustainable development is that it does not question the social order upon which economic growth and development is founded. Instead, it suggests a set of ideals which do not pretend to challenge the principles and order of consumerist societies, but rather they reinforce those principles by protecting the assets upon which they depend (Bartelmus, 1994; Adams, 2001).

The 'strong' environmentalists favour the integration and organisation of civil society in opposition to government and corporate decision-making. They emphasise the importance of the local above and beyond the regional and the global, and tend to promote more participative approaches, strengthening local and democratic mechanisms through participatory planning (Friedmann, 1992; Esteva and Prakash, 1992; Bartelmus, 1994; Bookchin, 1994; Bryant and

Bailey, 1997; Barkin, 1998; Sen, 2000; Chopra, 2001; Markandya, 2001; Adams, 2002; Connelly and Smith, 2002).

On the other hand, the 'soft' environmentalists favour neoclassical models of economic growth and development. They endorse corporate power and international institution-building (for example, the WTO, IMF, WB) in the name of economic efficiency. For them, local and global economic interests can be perfectly compatible, but most importantly, they believe that business-driven organisations and decision-making processes are at the heart of more efficient economic, social and environmental outcomes. 'Mainstream sustainable development thinking is built upon the conventional vision of a managed Keynesian world economy, mutual trading to mutual advantage and the environmentalism both of the '60s and '70s' (Adams, 2002: 425).

As I have presented here, the issues that lie behind the idea of sustainable development are by no means straightforward or conclusive. Quite the opposite, the idea of sustainable development as defined in the Bruntland Report, is set to continue fuelling academic and political debates at the international level. These take place in many different forums and political arenas, and between actors with different levels of power and decision-making capacities. Such differences give a particular dimension to discussions related to the local, national and international distribution of power and ethics. Discussions over sustainability can then be framed as a matter of economic power and of models of society.

It is therefore imperative to explore further the approach taken by Mexican officials to sustainable development. Interview analysis will provide evidence to illustrate the inherent tension between developmental and economic needs versus wealth distribution and environmental protection in Mexico. It will also, arguably, provide a clearer picture of how apparent progress in the sustainable development discourse may not translate into in any real changes in institutional practice.

1.3 Sustainable Development: Academic Considerations and Third World Political Ecology

'Environmental' and later 'ecological' economists were at the forefront of the efforts to define sustainable development. Their opposing arguments lay the roots from which the 'soft' and 'hard' branches of environmentalism grew (Seema, 2004). Environmental economists view the natural environment as an economic variable, whereas ecological economists stress the earths'

'sink capacity', and therefore point to the limits to growth given the earth's ecological conditions.

Thus, environmental economists propose market-driven analysis and solutions. They emphasise the multiplicity of possible combinations in the allocation of resources over time, and thus rely on market signals to adapt to the changing environmental circumstances. For them, the solution to the problem lies mainly in the quantification of natural assets, the internalisation of negative externalities and notably the promotion of better technology (e.g. the term 'technocentrist') and corporate responsibility. Technocentrists refute the idea of the 'sink capacity' of the earth, emphasising the potential that new technologies can offer and that there is a lack of sufficient empirical evidence to sustain 'apocalyptic' scenarios promoted by 'ecological economists'.

On the other hand, ecological economists (later called 'ecocentrists' or 'hard-line environmentalists') reinforce precautionary principles at the expense of economic growth and consumerism, and emphasise the ethical and philosophical dimension of sustainable development, as opposed to the anthropocentrism of environmental economists. For ecological economists, the focus for sustainable development must be the distribution of wealth, the promotion of cultural diversity and, more generally, a respect for nature and humankind. This is the essence of the so-called 'precautionary principle', whereby a lack of conclusive scientific evidence does not justify passivity or inaction in the face of perceived environmental threats. This viewpoint is largely based on moral and philosophical grounds, for which reason it is often criticised by technocentrist advocates.

The precautionary principle has been viewed by soft environmentalists as problematic, mainly because it supposes drastic and immediate changes to the world political economy. Hard line environmentalists propose complex solutions, openly challenging the economic status-quo and advocating for the prioritisation of local interests over global economic efficiency (Bookchin, 1994; Beck, 1995; Beck, 1997; Markandya, 2001). As the idea of sustainable development became more complex, more social disciplines were invited to participate, in an effort to better understand the social and political dimensions behind economic and environmental processes. In this way, economic and biological considerations were increasingly submitted to social and political dynamics.

Environmental politics, political ecology and Third World political ecology emerged (Bryant and Bailey, 1997; Peet and Watts, 2004). These disciplines developed in an effort to provide a

more integrated view that could identify the social and political interactions that led to large-scale environmental degradation and poverty in semi-industrialised and LDCs. By emphasising the importance of the political dimension, the political ecologists seek to give a more realistic view of the dynamics that determine social exclusion and environmental damage, and of the need to address solutions within that sphere (Bartelmus, 1994; Bookchin, 1994; Beck, 1995; Bryant and Bailey, 1997; Beck, 1997; Adams, 2002; Peet and Watts, 2004).

This emphasis on the political is justified by 'humanity's growing capacity to interfere in the natural environment in an organised and systematic way'. It is therefore of utmost importance that the management of resources and its implications is considered within the political sphere. Political ecologists seek to reveal how power is distributed among global actors by looking at who manages the earth's resources and whose interests are served. Because biological processes and the natural environment are increasingly subjected to the interests of 'capital', and 'nature' is the object of ever more intervention, the 'political' becomes the most relevant area in which changes can be made.

In the words of Bryant and Bailey (1997): 'Yet the relationship between politics and ecology is not an equal one. In effect, the role of politics in shaping ecology is much greater today than in the past as a result of rapid social and technological changes that render problematic the idea of a "natural" environment (McKibbens, 1989; Blaikie, 1995b), and may soon bring under human control the operation of ecological processes themselves. In contrast, the purchase of ecological processes on human affairs has long been in decline, and appears set to continue to decline in the future as "produced nature" becomes the norm.' (Bryant and Bailey, 1997: 6).

Political ecologists accept that their contributions are more often taken as a critical assessment rather than a set of systemic solutions through which an alternative political economy might be installed. They define their research objectives as 'an exploration' of the connections between poverty, wealth and environmental degradation within the framework of current political processes. Moreover, the discipline has been characterised as favouring empirical analysis over theory, which explains why the field is more a mosaic of 'similar areas of inquiry' rather than an integrated, coherent theory (Bartelmus, 1994; Bryant and Bailey, 1997: 5, 8; Adams, 2002; Peet and Watts, 2004).

Third World Political Ecology differs from environmental politics in many ways. On the one hand, its home discipline is geography and not political science. Third World political

ecologists claim to go further than simply to analyse 'green political theory, the impact of green issues on the formal political process, the state's role in environmental management and global environmental politics' (Bryant and Bailey, 1997: 17; Peet and Watts, 2004). Although in the exploration of the political dimensions of human-environmental degradation many studies might overlap with environmental politics, political ecology encompasses a wider understanding of politics. Instead of considering 'the environment insofar as it intrudes on the formal political process, (...) political ecology assesses the impact of a politicised environment.' (Bryant and Bailey, 1997: 17).

It follows that Third World Political Ecology lies at the radical end of the spectrum of sustainable development, sharing with ecological economists a radical perspective on the global capitalist system. Its advocates oppose mainstream economic policy (as dictated by the WB, IMF, WTO and other related institutions), emphasising the complexity and 'deep-rootedness' of the social-environmental interaction (Peet and Watts, 2004). They are, therefore, against 'quick-fix technical policy solutions' and against the belief that environmental issues are primarily the result of market distortions (Peet and Watts, 2004).

As Bryant and Bailey (1997) point out, the focus of the discipline has been to describe the impact of capitalism on 'Third World peoples and environments' both in time and space (Bryant and Bailey, 1997: 3). Political ecologists, therefore, clearly indicate the limits of sustainable development as a basis for radical change. For them, mainstream reformist approaches 'have hit an impasse both intellectually and practically in their efforts to address intensifying environmental problems.' (Bryant and Bailey, 1997: 4).

Though maintaining a radical ecocentric perspective, political ecologists do not necessarily advocate for 'an anarchic ecological utopia'. They mainly argue that the social and environmental contradictions of the global capitalist system make it impossible to reconcile resource exploitation and capital accumulation with environmental protection and wealth distribution, without substantially altering the status-quo. For them, there are only radical solutions to the Third World's environmental crisis, and these imply great political challenges and changes.

During the 1970s and 1980s, in an effort to integrate 'placed and non-placed' analysis; or, in other words, 'practice and theory', political ecologists turned to neo-Marxism and used dependency theory (for example, Frank, Cardoso, Faletto), world systems theory (for example,

Wallerstein) and modes of production theory (for example, Rey, Meillasoux; (in Bryant and Bailey, 1997; see also Peet and Watts, 2004). The discipline has evolved through left-oriented theoretical approaches to post-structuralism (Said, 1978; Bhabha, 1994; Escobar, 1995) and discourse theory (in Bryant and Bailey, 1997: 14; see also Peet and Watts, 2004).

During the 1990s emphasis was placed on the local level as the discipline moved away from its structuralist legacy. However, in the context of economic globalisation, the interest in integrating the local (where production takes place) with the larger political economy (where decisions are made) inevitably brought back political ecology to its structuralist past, although the approach was not necessarily Marxist (Bryant and Bailey, 1997: 14). Perhaps for this reason, in more recent works Third World Political Ecologists have stressed the need for contingency and flexibility in explanation (Peet and Watts, 2004).

Therefore, research initially focused on the impact of resource extraction activities such as logging, mining, fishing or cash crop production. However, the discipline is currently focused on urban issues and pollution, responding to the rapid industrialisation and urbanisation processes observed in many semi-industrialised and Third World countries. The role of the state is of particular concern, and has been studied from different perspectives, within a local dimension and in relation to the capitalist system as a whole (Friedmann, 1992; Bookchin, 1994; Bryant and Bailey, 1997; Beck, 1997; Chopra, 2001; Mestrum, 2003; Peet and Watts, 2004).

This recognition of the need to consider different levels of analysis by concentrating on political aspects at the local, national and international level, inevitably leads the discipline to consider the existence of boundaries. Both the natural and the political environments have different types of boundaries — some clearer than others — making them an essential feature to identify and define when conducting any analysis. From a more 'geographical' perspective, Adams (2002) puts it as follows: 'Both ecological and political boundaries (local, regional, national, or international) are relevant to the assessment of sustainability. Debates about the sustainability of particular developments might very easily descend into arguments about boundaries, and different actors (for example, governments, non-governmental organisations, and transnational corporations) may base conflicting assessments of the sustainability of controversial projects on different choices of boundaries for analysis.' (Adams, 2002: 425).

Bebbington (2002:301) suggests 'that a central thematic concern for development geography should be the attempt to understand the geographies of capitalism and of intervention in the South, the forces driving these geographies, the inter-relationships between them, and the possibilities for change in these geographies.' *Place* is, therefore, a central concept for development geographers along with *livelihoods*, *scale* and *network* (Bebbington, 2002). It is by an empirical understanding of how *places* are produced (often by the intervention or influence of people in other localities) that development geographers can improve their theoretical and empirical arguments, and build bridges across disciplines (Geography and Development Studies). Most important, development geographers can contribute further to development theory by documenting and explaining development processes (defined as a policy intervention or the development of capitalism), and therefore, by defining and expanding on the interactions of the above mentioned concepts. 'A second dimension of building better theory is by "theorising up" from placed-based studies' (Bebbington, 2002:303).

An understanding and consideration of the main arguments made by Third World Political Ecologists and development geographers is central to this thesis, as they will form the framework through which I will interpret the interview data and analyse the case of the largest clothing maquiladora in rural Yucatán. Interview data from government officials was selected for its capacity to explain how different levels of government and foreign entrepreneurs interacted to set in place the Export Maquiladora Programme for the Ex-henequen Region.

Thus, the economic, social and environmental impacts of one of the most competitive TNCs in the state of Yucatán are the focus of this thesis. Most of the questions that I set out to answer respond to the interests and principles of Third World Political Ecology. More detail is given in Chapter Four (Methodology).

1.4 Foreign Direct Investment and the 'Technocentric' Debate on Sustainable Development

As the Washington Consensus (WC) successfully imposed neoliberal economic measures in developed, semi-industrialised and less developed countries, the world economy grew, trade intensified and investment boomed. In this respect, the WC achieved two of its major goals: to promote economic growth and activate the global economy. However, for many critics much of this growth took place at the expense of the local people and the environment, particularly in

semi-industrialised and LDCs — and notably in LA (Esteva and Prakash, 1992; Barkin, 1998; Gilbert, 2004; Silva, 2004; Kay, 2004; Chant, 2004; Gwynne, 2004a; Gwynne, 2004b).

The whole package that the WC implied has arguably widened income gaps and worsened the environmental situation in many developing nations (Föster and Pearson, 2002a; WB, 2006; OECD, 2007; Gilbert, 2007). The promotion of liberalised investments and trade has certainly boosted the global economy, but the limits imposed on government spending and the promotion of corporate interests seem to have constrained the development of environmental policy and wealth redistribution in the developing world.

Most importantly, 'free-market' approaches have clearly benefited the entrepreneurial classes while weakening governments and workers' organisations. Economic development is more dependant than ever on FDI, particularly in LDCs (Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001; Deepak, Ashoka, and Panini, 2001). As a result, development policy was replaced by private business projects in most of the developing world. On assessing the impact of the WC, the OECD and the UN recognised serious failings and gaps in the neoliberal model established to enhance sustainable development in developing nations. In their view, corporate self-regulation and limited government intervention have not been sufficient to incorporate sustainable elements into practice (Gardiner, 2001; Fortanier and Maher, 2001; WB, 2006).

The discussions that emerged within these institutions (particularly the OECD and UN) centred on the impact of FDI on the environment. Reports suggest that, rather than fuelling a new generation of sustainable business projects, non-regulated financial markets have actually accelerated environmental depletion. More recently (2006) considerations on social exclusion have been added (OECD, 2007). Although it is difficult to trace the impact of portfolio investment on the environment and society, it is often accepted that the liberalisation of trade and financial flows have actually worked against sustainable principles of production and consumption patterns (Zarsky, 1999; Gardiner, 2001; Zarsky and Gallagher, 2004). For instance, some suggest that competition for FDI obliges host countries to enforce lower environmental standards, as well as less strict labour legislation (Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001).

Whether FDI has a direct negative impact on the environment (through the relocation of polluting industries), or whether it actually encourages the harmonisation of environmental standards (through technology transfers and 'green consumer exigencies'), is still debatable. In

any case, persistent pollution by TNCs and notably the liberalisation of FDI, reopened the debate on the role that governments should play in the economy (Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001).

The key concern is whether low environmental standards attract dirty industries or encourage TNCs to pollute once they establish in countries with weak institutional capacities. What is more, in an effort to attract FDI, semi-industrialised and LDCs may try to compete by lowering their environmental standards, thus creating 'pollution havens' (Zarsky, 1999). LDCs would then be the principal receptors of polluting industry in an effort to develop their economies, resulting in serious hazards to public health and the environment (Zarsky, 1999; Fortanier and Maher, 2001).

However, the optimists believe that the use of cleaner technology and better management practices — that are generally attributed to TNC operations — gradually improve the environmental standards in host countries (Zarsky, 1999; Fortanier and Maher, 2001). The process is described as an 'upward environmental pull'[3] that tends to harmonise the standards and performance of less developed and developed countries (Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001). This positive scenario would result from an increase in corporate responsibility and a consumer demand for green products, without the need for governmental intervention (Zarsky, 1999; Fortanier and Maher, 2001). In Zarsky's (1999) view, market-oriented solutions are unlikely and have clear disadvantages.

For instance, it is argued that the 'harmonisation' process — that is the process by which local industry 'catches up' with new technology and conscious consumerism dictates supply — if it happens, would be slow and incremental, therefore causing severe ecological damage until the changes finally concretise. Moreover, corporate self-regulation is limited to controlling pollution, leaving with little heed for other important aspects of sustainable development, such as wealth distribution, technology transfers and the promotion of qualified employment, among others. For Zarsky (1999) the best way to achieve substantial changes is to couple corporate self-regulation with governmental regulations on investment flows.

However, OECD members are reluctant to question economic liberalisation measures or the regulation of financial flows. As a result, environmental pollution in the developing world

[3] As opposed to the downward environmental pull, better legislation and law enforcement would result from the influence of 'cleaner' production processes and 'green' consumption patterns through FDI.

might well deteriorate as more TNCs take root. Considering 1) that minimal environmental regulation and poor law-enforcement reduces production costs (thus helping TNCs to be more competitive) and 2) that 'green consumerism' makes little difference, the environmental future of some developing nations does not look particularly bright. The situation is still worse if we acknowledge that the governments of semi-industrialised and LDCs are in no position to turn away dirty industries, given their need to provide jobs, increase exports and earn foreign currency.

The 'downward environmental pull' can be characterised as a 'prisoner's dilemma' in which only collective action can encourage better global environmental standards. Evidence of the existence of pollution havens in China, Nigeria, Brazil, the Philippines, Bhopal (India) and many other LA and Asian countries suggest that law enforcement in semi-industrialised and LDCs is one of the underlying problems (Zarsky, 1999; Gardiner, 2001; Gwynne, 2004b). Nevertheless, other cases point to positive environmental outcomes, making it difficult to speak about an average performance worldwide, or to conclude whether pollution havens dominate over pollution halos (Zarsky, 1999; Gardiner, 2001; Mercado and Fernández, 2002).

The fact that there is insufficient evidence to sustain or refute the pollution haven hypothesis (mainly due to a reluctance on the part of the major corporations to provide data and records), leaves open the debate over the impact of FDI on the environment (Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001). Zarsky's argument centres on the role that governments should play in regulating investment and boosting more sustainable projects, and on the responsibility that major investors have to promote them. Notably, Zarsky questioned US policy in that area and proposed specific measures to regulate investment markets under US leadership (Zarsky, 1999).

Although the 'pollution haven/pollution halo' debate seems to be lacking in its treatment of the more demanding aspects of sustainable development, it does serve to illustrate the arguments of the mainstream international economic institutions on the impact of neoliberal policy on the environment. In the light of mainstream sustainable development theory, the environmental aspect of my work could provide additional evidence for a more thorough examination of the pollution halo/pollution haven hypothesis.

As mentioned previously, mainstream sustainable development thinking fails to address the more critical social and economic aspects associated with the impact of FDI in LDCs. Pre-

sustainable development analyses of the impact of FDI focused on the macroeconomic level and were based on conventional economic indicators. An economic briefing paper for the Earth Summit of 2002 (Gardiner, 2001) and a publication by the OECD (Fortanier and Maher, 2001), among others, indicate some of the most common economic and social concerns associated with the impact of FDI in semi-industrialised and LDCs. These papers discuss general (social and economic) outcomes, achievements and failings of FDI from a traditional development perspective.

In the next section I will review what are said to be the positive medium/long-term economic and social outcomes of FDI. That review is an important part of this research in order to gain some understanding of the economic rationale behind the mainstream socioeconomic thinking that ultimately justifies the maquila policy in Mexico. As will become evident in the next section and in the chapters that follow, the EMI, like any other form of FDI, has had very limited results in terms of encouraging development.

1.5 The Social and Economic Impact of FDI in LDCs

A. Stimulation of the National Economy

Most authors agree that (all things being equal) FDI encourages exports and therefore promotes employment, economic growth and an improvement in the balance of payments (Gardiner, 2001; Fortanier and Maher, 2001; Deepak, Ashoka, and Panini, 2001; Loungani and Razin, 2001). On the other hand, the gains for host countries are not proportional to the volumes of FDI, but in fact largely depend on local conditions (Deepak, Ashoka, and Panini, 2001). Tax collection from local governments, transfer pricing by TNCs[4] and foreign currency outflows are key aspects that can limit or boost the local gains (Gardiner, 2001; Loungani and Razin, 2001; Gropp and Kostial, 2001). Foreign currency outflows depend primarily on foreign spending (such as the spending on imports or debt) which varies widely from country to country (Deepak, Ashoka, and Panini, 2001).

Semi-industrialised countries that a) are too dependent on imports; b) are heavily indebted; and c) where exports are low in value added are likely to experience fewer gains from FDI operations, simply because they spend large proportions of their foreign reserves on debt

[4] TNCs are responsible for one third of global exports and the vast majority of FDI (Gardiner, 2001).

payments and imports for consumption (for example, Mexico) (Cypher, 2001; Salas, 2001; Deepak, Ashoka, and Panini, 2001; Loungani and Razin, 2001; Parrado, 2005). In general, imports of intermediate goods have proven to be a significant source of outflows, particularly in semi-industrialised countries (WTO, 2003). Similarly, debt payments consume large proportions of foreign reserves (particularly in indebted countries like Mexico).

The management fees charged by local service suppliers (mainly banking, consulting and legal advice), the royalties paid to TNCs, profit repatriation and capital flight are other important factors that determine local gains, and which also vary between countries (Gardiner, 2001).

Perhaps more important is the fact that semi-industrialised and LDCs often compete with one another (in order to attract FDI), by reducing taxes and management fees, or even by assuring TNCs total profit repatriation (Gardiner, 2001; Loungani and Razin, 2001; Gropp and Kostial, 2001). Similarly, semi-industrialised countries are often targeted as potential markets for intermediate goods produced by TNCs, thus promoting foreign currency out-flows through imports. In sum, semi-industrialised countries are often unable to increase their potential gains and at the same time assure FDI flows.

B. Stability of FDI

It is argued that FDI flows are not affected by local currency devaluations, which represent an important advantage for LDCs (Gardiner, 2001; Loungani and Razin, 2001). Devalued currencies actually increase the value of capital investments by reducing the production costs in relative terms. Unstable currencies do not deter FDI inflows. On the contrary, they often attract them. Given that monetary instability is characteristic of LDCs, these can often rely on FDI in times of crisis.

In fact, LDCs often devalue their currencies to attract FDI (as is the case in Mexico). Those devaluations generally diminish consumer purchasing power (due to a decrease in real wages), thus having a negative economic impact in the medium to long term. Moreover, the intensification of FDI seems to be correlated with the intensification of financial crises in developing countries (Deepak, Ashoka, and Panini, 2001).

On the other hand, FDI is supposed to diversify local production, thereby reducing the dependence of semi-industrialised and LDCs on a limited number of products and sectors

(Gardiner, 2001; Deepak, Ashoka, and Panini, 2001). However, that is only true when host economies are linked to the TNCs' productive chains. In many cases TNCs import most of the inputs used in their production processes, particularly when local markets are unable to supply them, as is true of Mexico (more detail is given in Chapter Three).

Although FDI is generally a stable asset, the evidence suggests that FDI depends on favourable economic cycles. Periods of economic recession generate uncertainty that ultimately limits TNC participation in medium-term investment projects, and therefore limits FDI (Gardiner, 2001; Deepak, Ashoka, and Panini, 2001). In other words, semi-industrialised and LDCs could suffer from the consequences of negative economic cycles in DCs.

C. Skewed Distribution

Although liberal economic theory suggests that underdeveloped economies should yield better capital returns — and thus attract more FDI — than developed ones, DCs attract significantly more FDI than semi-industrialised and LDCs (Deepak, Ashoka, and Panini, 2001; Loungani and Razin, 2001; Gropp and Kostial, 2001). The distribution of investment flows to LDCs is highly concentrated in Asia (42 per cent) and America (38 per cent) respectively (Gardiner, 2001). However, 72 per cent of the total FDI is divided between developed countries (Gardiner, 2001; for more detail see Deepak, Ashoka, and Panini, 2001).

FDI is also often skewed within countries. For instance, the northern border states in Mexico have been significantly more successful than their southern counterparts in attracting maquiladoras, mainly because their proximity to the USA implies reduced transport costs (for the purposes of production and delivery).

D. Social development

One of the most controversial aspects of FDI is its impact on social development. Although FDI is said to promote an increase in wages, Gardiner (2001) and Robertson (2000) found that FDI actually benefits a small proportion of the workforce, namely the most skilled workers. As we will see in Chapter Three, in the Mexican case, most FDI occurs in industries where unskilled, low paid labour is most prevalent.

What is more, FDI can lead to increased income polarisation in host countries and changes in consumption patterns (Gardiner, 2001; Deepak, Ashoka, and Panini, 2001). Traditional patterns of consumption may be replaced by imported foods, products and leisure activities. The promotion of global consumerism and global productive chains may result in resource over-exploitation. More importantly, small and rural businesses do not attract FDI or bank loans, making it difficult for those businesses to stay in the market, or obliging them to seek alternative sources of finance (Gardiner, 2001; Cypher, 2001; Zarsky and Gallagher, 2004).

It is also said that the limited regulation of the labour market on the part of host governments may be seen as an asset by the TNCs. Lax labour legislation can imply lower production costs for TNCs, which may relocate to countries where enforcement of such laws is low (Gardiner, 2001).[5] Fortanier and Maher (2001) affirm that good working conditions, minimum wages and the right to unionise are not decisive factors in attracting FDI. On the contrary, they can be seen to undermine the interests of TNCs (see also Deepak, Ashoka, and Panini, 2001; Loungani and Razin, 2001). The evidence varies between countries and is, overall, inconclusive.

E. Infrastructure Development and Technology Transfer

On the one hand, the development of infrastructure to facilitate FDI operations often results in high costs for local governments. However, ports, roads and similar works can be used to develop local industry and businesses, sometimes leading to an increase in local investment (Deepak, Ashoka, and Panini, 2001; Loungani and Razin, 2001). More importantly, the gains from FDI would ideally pay for such investment over a reasonable time frame. In Mexico's case, government investments in infrastructure are considerable (and skewed) (see Rodríguez-Oreggia and Rodríguez-Pose, 2004 for more detail), but little is said about the use of such infrastucture by other economic agents.

On the other hand, much has been said on the transfers of technology and skills that TNCs actually promote in host countries. It is not clear whether the local industry modernises and integrates into global production chains, or whether TNCs encourage local competition in a positive way (Gardiner, 2001; Deepak, Ashoka, and Panini, 2001).

Capital intensive businesses may not be in the local interest or may have a negative impact on local competitors. Given the capacity of TNCs to switch to external suppliers and customers, they can broaden the spectrum of competition among firms, thus constraining the development

[5] China is certainly an example of how low labour legislations promote investments.

of local industry. However, Fortanier and Maher (2001) support the idea that TNCs transfer skills through the training of workers and the potential suppliers of inputs (see also Loungani and Razin, 2001); a view that is strongly contested by maquila opponents.

F. 'Crowding in' or 'Crowding out'

These terms refer to the impact that TNCs may have on the development of local industry. 'Crowding in' supposes the incorporation of local suppliers into the global productive chain. It is measured by the capacity of the TNC to stimulate growth in (up/down stream) domestic businesses within the national economies (Gardiner, 2001). 'Crowding out' is the result of 'market distortions' derived from the advantages that host governments give to TNCs. Those advantages range from low environmental standards to subsidies in water and energy supplies (they may also include improvements to roads and ports). This affects the local markets by creating oligopolies, or in the worst cases monopolies, for specific firms, discouraging healthy competition among the TNCs themselves (Gardiner, 2001). In some cases, TNCs are able to take over local industries or manipulate the market to gain control over locally produced inputs (Loungani and Razin, 2001; Gwynne, 2004a).

Again, the evidence seems to be case-determined and inconclusive. In the case of Mexico, the evidence indicates that integration of the local industry through maquila operations has been very limited, although the EMI is quite diverse and relatively competitive (Stoddard, 1987; Barajas, 1989; Fatemi, 1990; Sklair, 1993).

G. Scale and Pace of Investment

The environmental impact of large-scale production is said to be particularly difficult to regulate, due to the weak monitoring and lack of institutional capacities that characterise semi-industrialised and LDC governments (Gillbreath, 1992; Marchack, 1998; Gardiner, 2001; Montalvo, 2004). Furthermore, large amounts of FDI are often concentrated in primary sector activities (petroleum, mining, paper production, chemicals and utilities), which are particularly polluting (Bowen, Kontuly, and Hepner, 1995; Gardiner, 2001; Gwynne, 2004b). It is argued that in the short term, low-income economies will have less capacity to mitigate the environmental damage caused by such industries or take protective measures, leading to greater corrective costs in the long run, as well as potentially irreversible environmental losses (Grossman, 2000; Gardiner, 2001).

However, Fortanier and Maher (2001) stress that other factors, such as the development of basic infrastructure, access to inputs, wage costs, labour productivity, political risk and the size and growth of potential markets, are more important considerations for TNCs than environmental concerns (Fortanier and Maher, 2001). They contest the pollution haven and pollution halo hypotheses, and emphasise that corporate responsibility and the environmental policies of host countries both, ultimately, have a part to play in achieving a positive outcome (Fortanier and Maher, 2001).

As argued by Zarsky (1999), Fortanier and Maher (2001) reject the domination of the 'pollution halo' over the 'pollution haven' perspective, on the grounds of insufficient evidence. More importantly, they refute the existence of a 'regulatory chill' phenomenon, that is, a 'fear' on the part of semi-industrialised and LDCs governments that should they implement tougher environmental regulations it would serve to deter providers of FDI.

The OECD optimistically concludes that neoliberalism has alleviated poverty, created jobs and promoted both economic growth and sustainable development (Fortanier and Maher, 2001). Nonetheless, policies to encourage macroeconomic stability, good governance, capacity-building and environmental and social sustainability are said to be needed, as are measures aimed at self-regulation in order to cope with social and institutional demands (Fortanier and Maher, 2001).

Corporate codes of conduct, management systems and 'environmental reporting practices' are seen to be the most reliable solutions and are said to be developing among TNCs. The OECD has reaffirmed its commitment to promoting responsible corporate behaviour as a central means to enhance sustainable development (Fortanier and Maher, 2001; OECD, 2007). Since Mexico is a member of the OECD and is considered a mid-income economy, it is judged to be performing better than many developing countries (where the process of industrialisation has been more recent) and within the OECD norms. As we will see in the two following chapters, even taking the most conventional definition of development, it is far from certain whether the EMI has been an appropriate response to the developmental goals of the country.

Conclusions

The perceived environmental damage (on a global scale) and the social and economic disparities resulting from economic globalisation processes, led to the adoption of the term sustainable development under the UN auspices. The term is deliberately vague, since the aim was to present the interests of the North and the needs of the South as being compatible. In so doing, the Bruntland Commission managed to engage the international community in an open debate that lasts until this day. Eventually, the conflicting interests of the North and the South with regard to how to remedy the problems affecting the state of the earth became evident. In deed, North and South have different concerns, interests, and ways and means of dealing with environmental, economic and social issues.

As the debate polarised, the academic and scientific community engaged in the task of gaining a more palpable understanding of what is meant by sustainable development. Such engagement generated prolific literature. Mainstream interpretations of sustainable development are embraced by the main international economic institutions and rely on free-market approaches, technical solutions, corporate responsibility and conscious consumerism. More radical interpretations question the capitalist dynamic and structure, and emphasise radical changes to the worldwide political economy. The most radical advocates emphasise that the modernist model of development should be avoided, economic growth limited and prominence must be given to local economic and social interests.

In the context of neoliberalism, the breach between the two positions widened. The role of FDI came under scrutiny as it became the most important resource for development. For technocentrists, it is not clear whether TNCs move to LDCs to take advantage of 'weak' labour and environmental legislation. Nor is it clear whether TNCs promote development, better environmental performance and social wellbeing.

However, technocentrists take a more positive view regarding the role of liberalised investment flows in promoting the objectives of sustainability (allegedly, better environmental performance, economic growth and social development), although some claim that government regulations could bring substantial improvements. On the other hand, ecocentrics hold the current neoliberal structure responsible for ...erated environmental depletion and social polarisation. What is more, hardline environmentalists consider that TNCs and liberal market approaches are, *a priori*, incompatible with sustainability objectives.

Since human interests and the capacity to intervene in the natural environment are continuously developing, Third World Political Ecologists have found it more pertinent to argue about sustainability by concentrating on the political interests that lie behind environmental degradation caused by the economic activities of TNCs in semi-industrialised and LDCs. The intention of political ecology is, therefore, to reveal the underlying forces and to identify the actors involved in the specific cases where the economic, environmental and social dimensions of development intersect, as well as to explain and characterise the outcomes of such interactions.

The maquila policy represents a good example through which to illustrate such issues. Since the maquila industry is financed with FDI and essentially involves TNCs (operating in a semi-industrialised country), much of what has been discussed here — both good and bad — applies to the maquiladoras. The application of the NEM and the role of the Mexican government in promoting maquiladoras at federal, state and local levels could be analysed from the perspective of Third World Political Ecology or mainstream sustainable development.

The following chapter will describe the evolution of the EMI in Mexico, while Chapter Three will concentrate on the main critiques of the contested history of the maquila. As we will see, both chapters directly or indirectly deal with the problems introduced in this chapter. Case study analysis will provide evidence on the impact of a clothing maquiladora in a semi-rural area. 'Soft' and 'hard' sustainability perspectives will be considered to analyse the data, given that in some aspects the results are more positive (notably the economic impact on an aggregated level), while the success of other aspect could easily be contested (transfer of technology, the capacity to enhance social development and the impact on the environment).

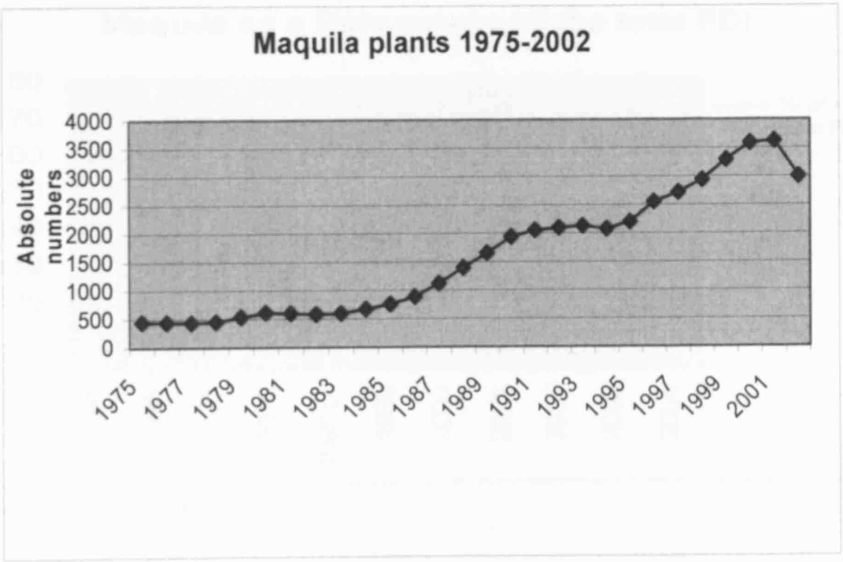
A BRIEF HISTORY OF THE MAQUILA IN MEXICO

Introduction

The Export Maquila Industry (EMI) is the most common form of FDI in Mexico, and has been so for almost 40 years. The intensity with which the Mexican government has promoted maquila activities has varied over time, but there can be little doubt that the EMI has become the cornerstone of Mexican development policy over the last two and a half decades. Since the North American Free Trade Agreement (NAFTA) was signed, Mexico has increasingly relied on the maquiladoras. The maquila industry has spread to most parts of Mexico; it has diversified; it has been among the three most important sources of income and foreign exchange; and it has registered the fastest employment growth rate for decades (INEGI, 2007).

Maquila employment and the number of maquiladoras operating in Mexico have grown consistently since 1965 and continue to do so (Figure 2.1). From 1992 onwards, the EMI developed at an even faster rate (INEGI, 2007). As a consequence of this growth, the importance of the EMI in attracting foreign currency through exports has far exceeded revenues from oil, and firmly consolidated the EMI's position as one of the two major sources of US dollars (see Figure 2.10, p. 99).

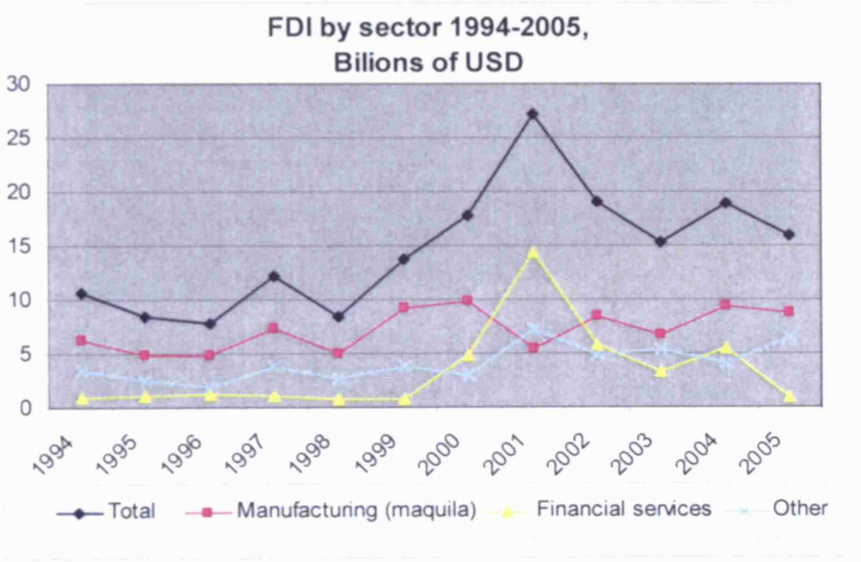
Figure 2.1: Maquiladora Growth 1975–2002



Source: Cooney (2001) and INEGI (2007)

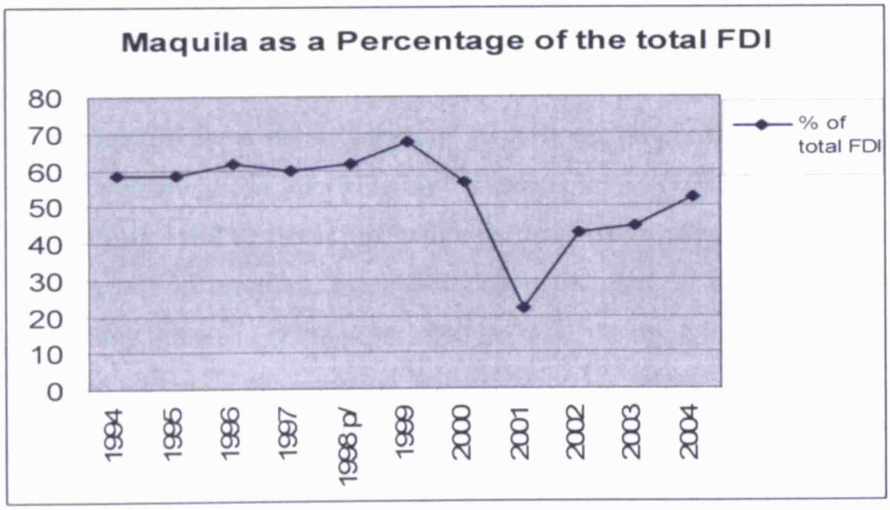
In absolute terms, five to ten billion US dollars have been invested in the maquila every year since 1994 — the year in which NAFTA was signed (Figure 2.2). Since that year, the maquila industry has accounted for more than 50 per cent of the total FDI in Mexico, although in 2001, FDI in the maquila industry fell to around 20 per cent of the total FDI and only gradually recovered (Table 2.3). The year 2001 saw a recession in the EMI, given that China — although it was considerably further from the USA than Mexico — was more successful in attracting US investors to maquila activities.

Figure 2.2: Foreign Direct Investment (FDI) by Sector (1994–2005)



Source: INEGI (2006)

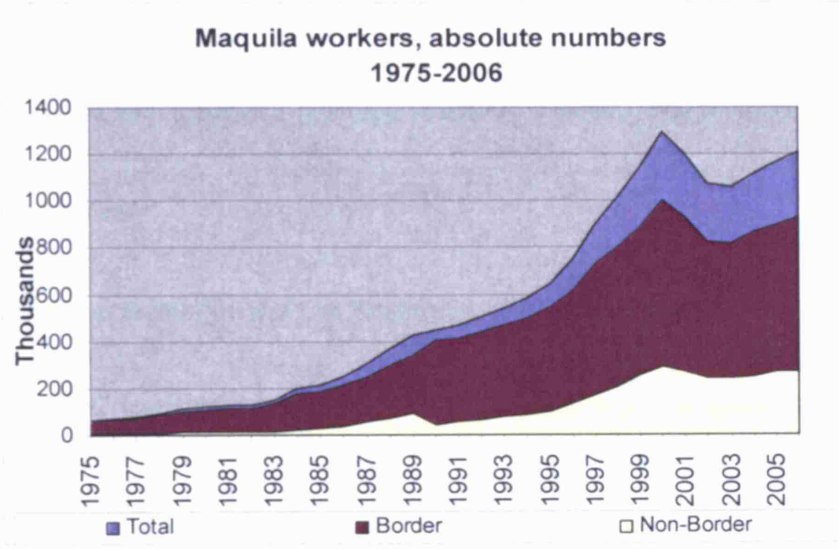
Figure 2.3: Maquila Investment as a Percentage of Total FDI (1994-2005)



Source: INEGI (2006)

As maquila activities became more common, they gradually located further and further from the Mexican border with the USA. Thus although the number of northern-border maquiladoras is far greater than that of maquiladoras in the centre and the south of the country, the latter have grown at a steady but constant pace, and continue to do so (Figure 2.4).

Figure 2.4: Maquila Employment in Mexico: Border and Non-border States 1975–2006



Source: Wilson (1990) and INEGI (2007)

Thus, in order to understand how and why the maquila industry has gained such a predominant position in the Mexican economy, one has to review the history of its development. Maquila development has been marked by a governmental effort to support and promote such activities, and therefore by a series of economic and legal provisions, as well as federal programmes to attract and reassure foreign maquila investors.

Some authors distinguish three main phases of maquila expansion: the first of these running from the mid-1960s to the 'crisis' of 1973–74; the second from 1975 to the collapse of the peso in 1982; the third from 1982 to 1993, just before the NAFTA was signed (Sklair, 1993: 43).[1] I propose a fourth phase in progress, from the crisis of the peso in December 1994 until the present day, including the crisis of the years 2000 to 2003, the result of competition from cheap labour in China and the economic recession in the USA.

[1] Weiler (2003) distinguishes three periods: 1965–86, 1986–94 and 1994 onwards. Barajas (in González-Aréchiga, ed., 1987) identifies four: 1965–1970, 1971–1976, 1977–1981, and 1982–1986 (Sklair, 1993: 43). Wilson (1996) proposes only two: 1965– 1982 and from 1982 onwards. Other authors distinguish four periods, 1965–1974, from mid-1974 to the end of 1976, the third from 1977 to August 1983 and the final period from the regulations of August 1983 onwards (González and Barajas, 1989:38 – 41).

The aim of this chapter is, therefore, to review the history of maquila development and to highlight the politico-economic measures carried by different administrations to support such activities. As we will see, an examination of the development and evolution of assembly activities in Mexico reveals the increasing reliance of policy-makers and government representatives on export-oriented activities as the country opened up its economy. The place of the maquila consolidated in the Mexican economy from a regional development policy to a national development strategy. Today, the EMI represents the most visible face of the NEM; but most of all, the increasing reliance on maquila operations shows the limited development options a globalised and liberalised economy offered to a country like Mexico.

2.1 The First 11 Years

2.1.1 Maquiladoras in the North: The Beginning of a Success Story?

The maquila policy started in 1965 as part of the Border Industrialisation Programme (BIP) promoted by President Gustavo Díaz Ordaz (1964–1970), based on the model of the Asian 'new export processing zones'. It emerged as a policy to employ rural workers after the end of the 'Bracero programme',[2] and as a response to a new trend towards globalised production processes promoted by the US government. The BIP was the culmination of a series of development programmes — such as the National Border Programme (NBP) — intended to alleviate the visible economic disparities of the border region by creating an economic zone (within the country) that could attract foreign currency.

On the other hand, the 'global assembly industry' developed as a response to the emerging crisis in Fordism in the late 1960s and the beginning of the 1970s. The next step in the rationale of capitalist expansion corresponded to the development of new export processing zones (NEPZs) in LDCs, the aim of which was mainly to reduce production costs (Fatemi, 1990; Wilson, 1990; Wilson, 1996). Thus, export processing activities have grown constantly since the 1970s in Asia, South America, the Caribbean, Africa and the Middle East (see Table 2.1).

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[2] The 'Bracero Programme' consisted of free entrance being given to temporary agricultural laborers to work in the USA. For González and Barajas (eds.) it went from 1951 to 1964 (González & Barajas, 1989 p. 16), whereas according to Islas (2004) it covered the period between 1942 and 1964. Most authors agree that it was ended by a unilateral decision on the part of the US government after the end of Second World War. Islas (2004) notes that it left 200,000 jobless agricultural laborers along the border (see also Fernández-Kelly, 1983; Sklair, 1993; Wilson, 1996).

Table 2.1: Percentage of Assembly Plants per Sector in Selected Countries (1978–1983)

	Clothing and textiles		Electronic products		Other	
	1978 %	1983 %	1978 %	1983 %	1978 %	1983 %
Asia	16	15	45	33	39	53
Hong Kong	32	31	4	5	64	64
Central American and the Caribbean	61	38	13	21	27	42
Mexico	33	27	47	39	20	33
South America	50	35	0	0	50	65
Africa and Middle East	41	41	2	1	57	58
Average	26	21	38	31	36	49

Source: Wilson (1990)

The facilities offered by the advances in technology, transportation and communications favoured the relocation of the whole productive chain, in the pursuit of efficiency and reduced costs. Corporate administration and control functions, research and development, advanced manufacturing of prototypes, routine manufacturing and labour-intensive assembly could be relocated in optimal conditions (Stoddard, 1987; Carrillo, 1989b; Wilson, 1990: 137; Wilson, 1996; Sargent & Matthews, 2001). The relocation of such activities was carried out first at a regional level and later on a global scale. Assembly activities were the first to go offshore in what is known as the post-Fordist period of production.

The maquila policy had a similar structure to that of the NEPZs of Singapore, Hong Kong, Taiwan and the Philippines, in what later became known as the Newly Industrialised Countries (NICs). The maquila programme started by taking advantage of the already existing free trade zone covering a distance of 20 kilometres into the interior along the northern Mexican border. Prior to the BIP, the 'National Border Programme' (*Programa Nacional Fronterizo*) sought to revitalise the regional economy by providing commercial and leisure services to American tourists, in a bid to attract foreign currency. Supplies of US goods were allowed within that 20 kilometre strip, a measure that was later used to supply the maquila industry (Barajas, 1989; Fatemi, 1990; Islas, 2004).

The Mexican government allowed duty-free entry to equipment, machinery and raw materials so that goods might be produced using cheap Mexican labour, on the condition that the items produced would be re-exported to the USA. The only tariffs paid would be on the value added,

that is the cheap labour carried out in Mexico.[3] The term 'in-bond' industry came about since 'a plant posts a bond with the government equal to the value of the import duty, which is returned to it once the plant exports the output made from the inputs' (Feenstra, 1997).

'Twin plants', 'assembly', 'offshore', 'in-bond', 'maquiladoras' or 'maquila' plants[4] began to multiply along the border. Ciudad Juárez and Tijuana were the first cities to host maquiladoras, since they already had the necessary infrastructure, for the most part developed by the Mexican government. That infrastructure consisted of access to labour and technicians of various grades and skills, industrial services, unlimited electricity, fuel and lubricants, existing transportation networks via air or overland, and communication and banking services.

The first maquiladoras were mainly clothing factories and other enterprises characterised by low investment capital (for the most part, furniture and assembly of toys). In 1968, Ciudad Juárez, one of the cities with the most maquila plants to this day, was host to ten maquiladoras, employing around 1,502 workers. Acapulco Fashions was the largest of these, employing some 500 workers with a fixed capital of US$300,000 (Fernández-Kelly, 1983: 82; Sklair, 1993: 100; Canto & Cruz, 2004).

Although this type of investment was welcomed under the BIP, the nature and quality of the jobs was called into question, despite the rapid growth in the number of plants coming to Juárez and Tijuana. Mexican officials and local entrepreneurs were quick to see the potential for encouraging more complex and value-added processes under the maquila umbrella, perhaps after having seen the evolution of such activities in Asia (Stoddard, 1987; Barajas, 1989; Fatemi, 1990; Wilson, 1990). During this period, foreign ownership of maquila plants was limited to 49 per cent, as part of a government measure to protect local industry (Islas, 2004: 82).

During the 1970s President Luis Echeverría (1970-1976) promoted an import-substitution model of development (ISI), supported by substantial revenues from the oil industry. Nevertheless, maquila development was continued as a regional development policy along the northern border and was even extended to other parts of the country (Stoddard, 1987; Sklair,

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[3] The benefits for Mexico would mainly be the foreign currency paid on the value added through taxes and the jobs created.

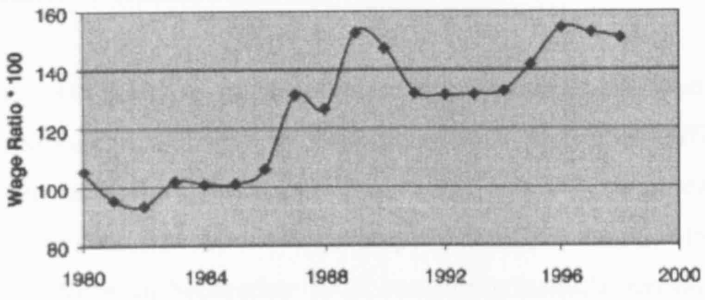
[4] The term in Spanish refers to the payment — in kind — that millers charged for their services during colonial times (González & Barajas, 1989 106). Sometimes, *maquiladoras* are also referred to as 'twin' plants, since they are commonly a complement to the work of another plant situated in a city on the other side of the border (González & Barajas, 1989 16).

1993; Wilson, 1996; Islas, 2004). A series of regulations went on to legalise the establishment of maquiladoras outside the border and 'free zones'. In what seemed to be a strategic policy aimed at depressed coastal areas, Echeverría authorised the establishment of maquiladoras far from the north and, soon, anywhere in the country. Only highly industrialised cities and regions — D.F, Monterrey and Guadalajara — were excluded from the sphere of maquila operations (González & Barajas, 1989; Sklair, 1993; Islas, 2004).

The expansion of the 'industry' into the interior of the country was initially limited to northern states such as Chihuahua and later Coahuila, but by 1972 it had reached the southern city of Mérida in the state of Yucatán, with at least two maquiladoras located there (Sklair, 1993: 143; Wilson, 1996: 91).[5] 'By 1974, there were 83 non-border maquiladoras employing 12,850 workers; despite the legal provisions implemented to boost development in non-industrialised areas, some of these were established in Guadalajara and Mexico City itself, in Torreón, Monterrey and other industrial cities' (Sklair, 1993: 144).

Although the development of the maquila in the interior has been notable, in relative numbers it has always been marginal when compared to the number of maquiladoras in the north — that is in the states of Baja California, Sonora, Chihuahua, Coahuila and Tamaulipas (Figure 2.4). It appears that most of the maquila plants located in the interior of the country in 1973–1974 were attracted by the prospect of even lower wages than those found along the northern border, and they were generally smaller companies. In fact, the differences in wages (from maquila and non-maquila industrial activities) between the north and the rest of the country have actually widened with the development of maquila operations (see Figure 2.5).

Figure 2.5: Wage Differentials between Industrial Salaries in Border and Non-border Regions (Maquila and Non-maquila), 1980–2000



Source: Weiler and Zerlentes (2003)

[5] Canto and Cruz (2004) date the first maquila in Yucatán as being established in 1981.

As shown in Figure 2.5, the wage differentials between the northern border states and the rest of the country began to increase since 1986 — and have continued to do so until today — reaching their highest peaks in 1989 and 1996. The increasing wage differentials are attributed to the processes of industrialisation and urbanisation along the northern border, of which the EMI is an important part (Weiler & Zerlentes, 2003).

It is documented that plants located in the interior reacted fast to US recession cycles, leaving the country when business got tougher. With time, small firms with maquila plants in the interior were replaced by larger firms, 'which tended to make stronger commitments in terms of the number of jobs that they offered' (Sklair, 1988; Wilson, 1996; Bair, 2001; Weiler & Zerlentes, 2003). A series of regulations promoted by the Echeverría administration sought to open up the market for maquila products that substituted US imports and contained a percentage of national inputs. Those regulations allowed 100 per cent foreign ownership and enabled companies to acquire real estate (Islas, 2004). This shows how despite the implementation of the Import Substitution Industrialisation (ISI) programme at that time, the Mexican government gradually opened its market to maquila inputs.

Despite this relative success, the first expansionist phase of the EMI was not without problems. Under the logic of a corporate state, Echeverría had to deal with the growing concerns among the CTM[6] leaders that they were losing power in the maquila sector. The northern maquila workers did not feel represented by the CTM and began to organise under alternative unions (Stoddard, 1987; Fatemi, 1990; Sklair, 1993). The first crisis in the maquila industry came as these pressure groups sought to increase the salaries and rights of the workers, and US investors were put off by the prospect of a Mexican labour force that was organised and used to mobilisation (Stoddard, 1987; Wilson, 1996). 'Maquila investors threatened to leave the country as quickly as they had arrived' (Sklair, 1993).

The CTM immediately mobilised to repress the emerging unions, and soon after that the maquila industry entered into an 'Alliance for Production' with government officials. With the full support of the government, the CTM regained control of a workforce increasingly worried that their jobs might all be lost. The Mexican government devalued the peso from 12.5 to the dollar to over 26 to the dollar in September 1976, reassuring maquila investors that Mexico welcomed such operations with open arms (Sklair, 1993). For the first time, maquila investors

[6] The CTM (*Congreso de los Trabajadores Mexicanos*) had been the largest and most significant labour union in Mexico for decades at that time, and its consolidation responded to the corporative rule of the PRI.

realised the strength of their bargaining power and their importance as job suppliers for Mexico's developing economy. The first crisis was over.

2.1.2 The Maquila Industry: An Alternative to the 'Oil-based' Economic Model?

The Mexican economy at that time was largely based on state-owned enterprises and on protected, uncompetitive local industry. State-owned enterprises had monopolised the energy, oil, health and other infrastructural sectors since the 1930s. However, during the following presidential term, President José López Portillo (1976–1982) continued to have oil revenue at his disposal to finance public expenditure and subsidise state-owned enterprises, while protecting private industries.

Meanwhile, in what is known as the second phase of maquila expansion, new organisations were created to pursue maquila development, by promoting a more open and friendly position compared to that of the previous administration. The 'Coordinating Commission of the National Development Plan for Border Regions and Free Trade Zones' (CODEF in Spanish)[7] was established to co-ordinate the policy for the northern border; and the conferences held by the 'Maquiladora Industry Council'[8] became a major event to which to invite potential investors (Sklair, 1993; Islas, 2004).

At the same time, two federal programmes were launched in 1978 and 1979 to promote industrialisation in depressed areas and to regulate industry in highly industrialised cities. Once again, Mexico City, Monterrey and Guadalajara were banned from being maquila receptors. Rural states such as Oaxaca and Yucatán were targeted as ideal hosts for maquiladoras and were favoured by governmental expenditure in infrastructure (Sklair, 1988; Sklair, 1993). The intention was that interior maquiladoras would be set up as joint-ventures, with Mexican companies and entrepreneurs retaining the larger share, unlike the situation in the border maquiladoras (Stoddard, 1987; Fatemi, 1990; Islas, 2004).

In addition, the programme 'Alliance for Production' sought to promote the participation of local industry within the export-processing activities by reducing taxes on imported inputs (Wilson, 1996: 82). These institutional readjustments reflected how the maquila industry (and

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[7] In Spanish, *Comisión Coordinadora del Programa Nacional de Desarrollo de las Franjas Fronterizas y Zonas Libres del País (CODEF)*.

[8] The *'Consejo Nacional para la Industria Maquiladora de Exportación'* (CNIME) was created in 1965 under the BIP and was part of CANACINTRA (*Camara Nacional de la Industria para la Transformación*) but its activities became particularly relevant under the Portillo administration.

more generally export-processing activities) was consolidating its position within government institutions, leaving no doubt as to its importance for the future economic development of the country.

The second phase in the development of the EMI sought to establish the maquila as an entity in which more local entrepreneurs could participate, and for the first time was regarded as a long-term project to be followed up by later administrations. Although more maquiladoras were owned by Mexicans, these were still relatively few in comparison to the US and Mexican/American-owned ones. In an effort to establish a more open position on maquila development than his predecessor, López Portillo adopted a series of measures to boost maquila investments and ease their relations with the government (Barajas, 1989; Fatemi, 1990; Sklair, 1993).

The government encouraged maquila operations by promoting them among state governments and local entrepreneurs, by setting up industrial parks and alleviating their fiscal position, and notably by easing the quota problems of textile maquilas. In addition 'a single channel of communication for the treatment of all in-bond problems' was successfully instated and maquila administration was simplified (Sklair, 1988; Sklair, 1993; Islas, 2004).

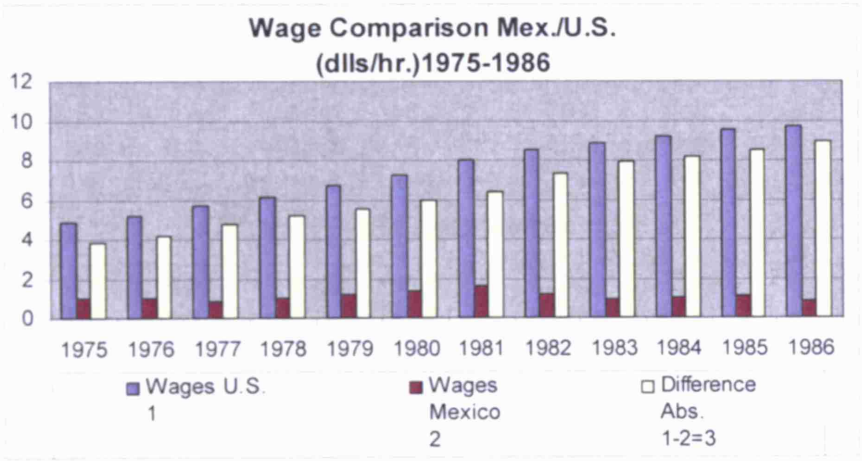
Despite those measures, the maquila industry experienced a severe crisis and almost 4,000 jobs were lost between 1981 and 1982 (Sklair, 1993). The second crisis in the maquila industry was the result of a loss of competitiveness on the part of Mexican salaries.[9] An unprecedented growth in maquila wages — which almost tripled in dollar terms over a period of five years — put Mexican salaries above those of Hong Kong, South Korea, Taiwan, Singapore and Brazil (González & Barajas, 1989; Chrispin, 1990; Sklair, 1993; Wilson, 1996). Much talk about transferring maquila operations to other more competitive Third World countries left López Portillo's government concerned.

The government response to this and other economic and financial problems (such as payment of the enormous debt) was a series of devaluations of the peso, which saw it drop in value from 26 to 70 pesos to the US dollar during the course of 1982 (Sklair, 1993: 66). The devaluation of the peso meant that maquila wages fell from an all time high of US$1.53 dollars an hour to about 76 cents an hour (Chrispin, 1990: 75; Sklair, 1993: 66). The peso devaluation was enough

[9] At the time trade unions in the 'maquila' sector had virtually no bargaining power (Feenstra, 1997; Cooney, 2001).

to save the maquila industry, with 24,000 jobs created in the sector in 1983 (Sklair, 1993: 67). Figure 2.6 illustrates how competitive maquila salaries were during the period, and how the gap between minimum wages in Mexico and the USA has opened up since 1975.

Figure 2.6: Minimum Wage Comparisons between Mexico and the USA, 1975–1986



Source: González and Barajas (1989)

However, at that time, the maquila industry was not really seen as the basis for a major development strategy or as a sector which might serve to characterise the conditions and quality of the employment in Mexico (Stoddard, 1987). State-owned enterprises, government bureaucracy and local industry were far more significant in characterising working conditions and salaries in Mexico. Despite maquila growth and the sustained efforts of successive administrations to open up and facilitate the entry of inputs for the maquiladoras, it represented a small slice of the economy when compared to the importance of state-owned enterprises (principally, the oil, energy and health sectors), and the protected local industries.

The maquila industry in the early 1980s was characterised by labour intensive activities, low-skill levels and a young female labour pool. Apparel and electrical maquila plants dominated the sector. As shown in Table 2.2, the number of maquiladoras grew as successive presidential administrations gradually facilitated maquila investments, and gave a clear follow-up to the maquila policy.

Table 2.2 Maquila Development by Presidential Term (1966–1989)

Year	No. of Plants		No. of Workers		Wages and Salaries (millions of pesos)		Value Added (millions of pesos)	
	Absolute	%	Absolute	%	Absolute	%	Absolute	%
DÍAZ ORDAZ ADMINISTRATION								
1966	12	2.6	3107	4.0	48.7	2.0	183.2	4.6
1967	21	4.6	3227	4.2	42.3	1.7	98.2	2.9
1968	33	7.2	4741	6.2	70.2	2.8	168.9	4.2
1969	29	6.3	43886	5.7	49.8	2.0	154.5	3.9
1970	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ECHEVERRÍA ADMINISTRATION								
1971	86	18.9	9018	11.8	132.3	5.4	443.2	11.2
1972	288	63.2	35582	47.0	617.8	25.3	1570.6	39.8
1973	454	99.7	52555	69.1	934.5	38.3	2360.1	59.8
1974 base year	455	**100.0**	75974	**100.0**	2433.6	**100.0**	3945.5	**100.0**
1975	454	99.7	67214	88.4	2429.7	99.8	4014.5	101.7
1976	448	98.4	74496	98.0	3321.4	136.4	5425	135.1
LÓPEZ PORTILLO ADMINISTRATION								
1977	443	97.3	78433	103.7	4527.5	186.0	7117.6	180.3
1978	457	100.4	90704	119.3	5986.7	246.0	999.9	253.4
1979	540	118.6	111355	146.5	8466.9	347.9	14543	368.5
1980	620	136.2	119546	157.3	10497.7	431.3	17228.8	449.3
1981	605	132.9	130973	172.3	14644.1	601.7	23956.9	607.1
1982	585	128.5	127048	167.2	24519.7	1007.0	45587.7	1155.0
MIGUEL DE LA MADRID ADMINISTRATION								
1983	600	131.8	150367	198.5	46297.9	1928	99521.2	2522
1984	672	147.6	190684	250.9	100705.8	4138	104756.6	4936
1985	720	167.0	211968	279.0	167665.3	6889	325249.6	8243
1986	907	199.3	235150	335.8	200753.1	8249	443046.3	11229
1987	1075	236.2	196336	390.0	291786.7	11989	649008.2	16449

Source: González and Barajas (1989)

2.2 The Maquila as a Leading Development Policy

2.2.1 The EMI: An Alternative to Global Economic Integration?

What is generally seen as the third phase of maquila expansion began in 1982 under the Miguel de la Madrid administration (1982–1988). Again, a series of changes were implemented to promote the development of the industry, and as a response to the incapacity of the ISI to foster development in the country. The days of the maquila as a regional development strategy, an

'export processing zone' or even a programme for depressed areas of the country were largely over. The EMI became the main sector to create jobs, stimulate the national economy and attract foreign currency. During this period the maquila industry consolidated as the focal point for the country's development (Schoepfle & Pérez-López, 1990; Wilson, 1996; Feenstra, 1997; Weiler & Zerlentes, 2003; Islas, 2004).

De la Madrid first simplified the administrative process behind establishing a maquiladora by reducing the bureaucratic paper-work and exhorted TNCs to install assembly plants all over Mexico, with the exception of the highly industrialised Mexico City (Weiler & Zerlentes, 2003: 285). Maquila products containing at least 20 per cent of local inputs were allowed to be re-exported to Mexico for sale, free of duty (Islas, 2004: 82). In 1983, a decree reduced restrictions on automotive exports, eliminated taxes on import duties and encouraged companies to buy as many inputs as they could from local producers (Carrillo, 1989a; Scheinman, 1990; Wilson, 1996; Feenstra, 1997; Weiler & Zerlentes, 2003).

The aforementioned peso devaluation of 1982 reduced real wages by 40 per cent, making Mexican labour more competitive, and multiplying the value of the foreign investment coming in (Scheinman, 1990: 120; Feenstra, 1997; Weiler & Zerlentes, 2003: 285). Such measures clearly favoured the automotive and electrical/electronics industries, which grew at a surprising rate during that period (Table 2.3). Meanwhile, the Peso devaluation continued to stimulate exports to service the foreign debt (Figure 2.7).

Table 2.3: Evolution of EMI by Sector 1982–1988

	1982	1988*
Number of plants		
All sectors, nationwide	588	1,450
Transport and equipment	44	129
Electrical and electronics	223	424
Textiles	11.7	205
Number of employees		
All sectors, nationwide	122,500	361,800
Transport and equipment	12,288	77,502
Electrical and electronics	66,428	157,182
Textiles	15,002	35,954
Value added (millions of dollars)		
All sectors, nationwide	832	1,570
Transport and equipment	158	487
Electrical and electronics	453	609
Textiles	66.6	80.1

Continue next page

Addendum:		
Avg. employees per plant, all sectors	208	250
Avg. value added per employee, all sectors (dollars)	6,792	4,349

Source: Fatemi (1990)

Figure 2.7: Maquila Wages and Foreign Debt Interest Payments

Source: Barajas (1989)

Some government agencies were reshaped and renamed. CODEF was replaced in August 1983 by the 'Inter-secretarial Commission' to oversee the border policy announced in the 1983–1988 National Development Plan (Carrillo, 1989a; Sklair, 1993). Two new programmes were launched to promote, once more, the participation of local industry in export processing activities. The 'Temporary Imports Programme for Exports' (PITEX)[10] and the 'Programme for Exporting Industries' (ALTEX)[11] allowed local enterprises engaged in exporting activities to import inputs free of duty, and were supported with credits from Bancomext and Nafin (Wilson, 1996: 84; Islas, 2004). That same year maquiladoras were authorised to sell up to 20 per cent of their output in the local market, ironically contradicting the initial nature of the EMI as an export-processing enterprise (Islas, 2004: 82).

The enthusiasm with which the government promoted the maquila industry was unprecedented. In 1986 de la Madrid finally declared that the EMI was a priority sector for the economy[12] and set in motion yet another round of SECOFI surveys to provide more measures that could boost maquila development and facilitate the operations of those already in the business (Clement & Jenner, 1989; Sklair, 1993; Feenstra, 1997). That same year an exhibition entitled 'Expo

[10] In Spanish *Programa para la Importación Temporal para Exportación* (*PITEX*).
[11] In Spanish *Programa para las Industrias Altamente Exportadoras* (*ALTEX*).
[12] By that time the maquila was already one of the largest sources of foreign currency, after oil and tourism (Wilson, 1996: 83).

Maquila' was held in Acapulco to promote the industry as an opportunity for foreign investors (Clement & Jenner, 1989: 119). The De la Madrid administration was regarded as pro-USA, controlled by a technocratic bureaucracy and very different from the previous nationalist administrations. De la Madrid was trained in Harvard Univeristy, USA, and was among the first of a series of policy makers openly encouraging liberal economic measures in Mexico.

The nature of the EMI changed dramatically during that period. Machinery, electrical and electronic supplies, as well as automotive equipment, were identified as priority sectors in what were later called the 'second generation' maquilas (Carrillo, 1989a; Wilson, 1996; Weiler & Zerlentes, 2003). At the same time, large plants were clearly favoured, based on the rationale that 'fewer larger plants are better than more small maquilas' (Sklair, 1993).

The incorporation of flexible processes was introduced mainly in the electronics and automotive maquilas. Programmable and automated machinery (robots) enabled the producer to respond to market preferences without incurring significant costs due to 'retooling' or 'down-time'. The rotation of personnel through different tasks was in sharp contrast with the repetitive work on the assembly-line that was characteristic of Fordism (Carrillo, 1989a; Carrillo, 1989b; Wilson, 1990; De la O, 1994; Carrillo & Hualde, 1996; Carrillo & Hualde, 1997; Ramírez, 2001).

The participation of the workers was more dynamic, working conditions improved, the quality of the manufacturing was enhanced through teamwork, and 'reward systems' were favoured, instead of penalties for poor performance. Teams were responsible for the completion of sub-products, increasing co-operation, quality control and commitment on the part of the workers (Carrillo, 1989a; Carrillo, 1989b; Wilson, 1990; De la O, 1994; Wilson, 1996; Carrillo & Hualde, 1996; Carrillo & Hualde, 1997). The subcontracting of activities to more competitive firms replaced vertical integration and partitioned the production process into many more phases.

The just-in-time (JIT) process of delivery between contractors and assemblers was rendered possible thanks to the development of computer monitoring. JIT facilitated more long-term contracts with fewer suppliers than was usual with the Fordist model (Carrillo, 1989a; Wilson, 1990; Wilson, 1996; Carrillo & Hualde, 1996; Ramírez, 2001). All these innovations were taken from the Asian schemes and were rapidly implemented in North America and Europe, shaping the new form of production in a worldwide, more integrated economy (Wilson, 1990; Wilson, 1996; Carrillo & Hualde, 1996).

Second generation maquiladoras were often non-American, including more Japanese and South Korean plants, although these were represented by their American branches (González & Barajas, 1989; Scott & Worley, 1990; Carrillo & Hualde, 1996). The expansion of Japanese maquila plants from 1987 onwards was spurred on by the advantageous location and competitive edge that Mexico offered through cheap and 'high-quality' labour (Scott & Worley, 1990). Japanese ventures of US subsidiaries — legally American-owned — took advantage of customs provisions 806.3 and 807 (Chrispin, 1990). The expansion of electronics, and later textile, clothing, transportation, furniture, home appliance, toy and sporting, maquiladoras represented a serious Japanese commitment to offshore assembly activities in Mexico (Prock & Torres, 1990).

A 40 per cent increase in the number of maquila plants meant that the number of maquila employees almost doubled in the period between 1979 and 1985 (Sklair, 1993). The fastest growing sectors were electrical and electronic components and equipment and auto parts (González & Barajas, 1989; Fatemi, 1990; Sklair, 1993; Wilson, 1996; Carrillo & Hualde, 1996). By the end of 1987 there were 120 maquilas in the 'deep' interior, creating more than 20,000 new jobs. The biggest receptor of the electronics maquiladoras was Guadalajara, a city that had hosted few 'electronics plants' in the late 1970s — and was banned twice as a maquila receptor (González & Barajas, 1989; Sklair, 1993; Wilson, 1996). This shows that capital intensive maquilas at the time were in need of urban infrastructure, and therefore had to locate in big industrial cities.

From 1984 to 1988 the automotive industry grew at an impressive average annual rate of 103 per cent, with its exports increasing from 33,635 to 171,695 units (Scheinman, 1990: 120-126). Ford, Chrysler and General Motors (the 'big three') were the main exporters of cars to an expanding US market, leaving behind Volkswagen[13] and Nissan, which had accounted for 95 per cent of the export market in 1981 (Scheinman, 1990: 120-126).[14] Volkswagen accounted for 64.4 per cent of the car export market in 1981 (Nissan 30.3 per cent), 45 per cent in 1984 and only one per cent in 1988, exporting mainly small sedans to West Germany. Volkswagen was not a maquiladora in its fullest sense, since it had served the local market since 1975. However, Volkswagen have been marginal suppliers compared to the Big Three, which accounted for 67 per cent of the total (local and foreign) market in 1988 (Scheinman, 1990) .

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[13] Volkswagen started its operations in the 1970s and has been the oldest automotive maquila in the country to date. The Puebla plant was discussing closure in 2003.

[14] West Germany and Central and South America were the destination for such exports with a market share of 64.4 per cent and 30.3 per cent, respectively (Fatemi, ed., 1990:120).

As the importance of the automotive industry grew on a global scale, and profiting from the devalued yen and the import quotas granted to American cars in Japan, the automotive maquila sector continued to develop (González & Barajas, 1989; Scheinman, 1990; Ramírez, 2001). Newly merged companies formed between the big three and Japanese firms (Mitsubishi, Isuzu and Suzuki) assembled their units in Mexico, representing a sizeable share of the automotive maquila operations. In 1986 exports of more efficient small cars rose from 104,000 to more than 257,000 units (Scheinman, 1990: 126) (see Table 2.4).

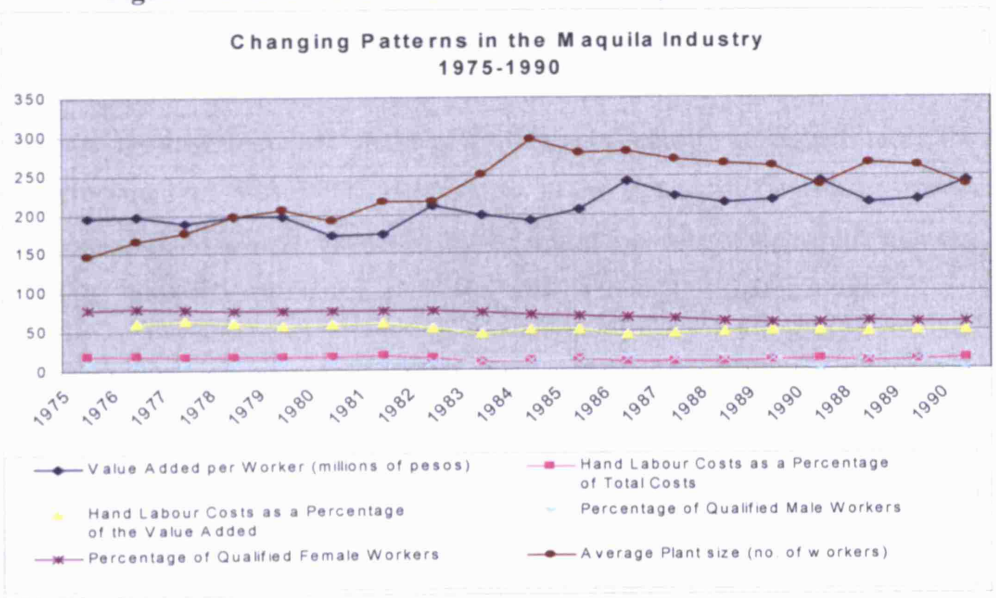
Table 2.4: Automobile Maquiladoras, 1987

	General Motors		Ford		Chrysler		Other		Total	
Location	Plants	Total workers	Plants	Total workers	Plants	Total workers	Plants	Total workers	Plants	Total workers
Border	12	23,724	5	7,517	2	2,727	67	14,101	86	48,070
Non-border	5	na	1	Na	0	0	10	na	16	8,377
TOTAL	17		6		2		77		102	56,447

Source: González and Barajas (1989)

Figure 2.8 shows the increase in the value added per worker in the EMI, as the electrical/electronics sector consolidated and the automotive maquila sector grew. Contrary to what is argued by many authors, improvements in the value added per worker did not translate into significant improvements in salaries or in the percentage of qualified (male) labour (Figure 2.8). In fact, salaries (as a percentage of the total costs) barely changed and qualified male employment increased little.

Figure 2.8: Evolution of the EMI 1975–1990, Selected Features



Source: Wilson (1996)

2.2.2 The Maquila Industry and the New Economic Model (NEM)

By the time maquila expansion had reached its third phase, it was clear that Mexico's industrial and economic development was based on export-led activities and, therefore, depended on FDI. For that reason new questions were raised regarding the capacity of maquiladoras to boost development all over the country (Fernández-Kelly, 1983; Sklair, 1988; González & Barajas, 1989; Sklair, 1993; Wilson, 1996). 'What started out as a set of economic zones became something much more. The maquilas were established to create jobs and earn foreign currency like all other economic zones, but they were in time transformed into strategic centres with the potential to stimulate development throughout the regions in which they were located and, ultimately, throughout the whole country' (Sklair, 1993: 17).

As the importance of the EMI became evident, any evaluation had to acknowledge that the industry had become the focus of what was virtually the only development policy in the country, and that the application of the NEM left few alternatives. Academics became more interested in the sector as it became the most highly significant one, through which the economic development of the country could be followed and the conditions of increasing numbers of workers characterised.

The third phase of maquila expansion coincided with the promotion of liberalised regional and global trade, and not surprisingly with the recent entry of Mexico to the GATT in 1986 (González & Barajas, 1989; Feenstra, 1997; Weiler & Zerlentes, 2003; Islas, 2004). The WB and the IMF vigorously promoted the implementation of neoliberal measures, particularly in indebted countries like Mexico. Private businesses and TNCs were encouraged to go off-shore, with the task of promoting development in semi-industrialised countries that had failed to develop under the ISI. The third phase of the maquila industry continued under the Carlos Salinas administration (1988–1994), culminating in the signing of the North American Free Trade Agreement (NAFTA). It was under NAFTA provisions that the maquila industry started to be called the 'Export Manufacturing Industry' (EMI) from 2001 (Islas, 2004).[15]

During the Salinas administration, the legal process for registering a company as a maquiladora was simplified to a minimum of one procedure, through a decree passed in December 1989 (Wilson, 1996; Cooney, 2001; Islas, 2004). The criteria to be legally eligible as a maquiladora

[15] During the period from 1983 to 1992, FDI grew from US$461 million to US$4.7 billion (Muñoz, 1997 in Weiler, 2003: 285).

were expanded, benefiting those foreign-owned export industries not formerly registered as maquiladoras (Wilson, 1996). The measure enabled those companies to continue being part of the PITEX and ALTEX (Wilson, 1996). The possibility of selling up to 50 per cent of the maquila outputs in the local market was regarded as the end of the long-standing protectionist measures on the part of the government, bringing into question the characterisation of the maquilas as solely an export-oriented development initiative (Islas, 2004).

For some, the signing of NAFTA implied the elimination of the maquila — in legal terms — since the total suppression of trade barriers meant the elimination of 'in-bond' placements to allow the entry of inputs for assembly activities (Sargent & Matthews, 2001; Islas, 2004). Free trade among member countries allowed the free entry of inputs for both the local and maquila industries but, most importantly, it permitted the commercialisation of outputs in all member countries (Islas, 2004: 83).[16]

On the other hand, Article 303 regulates the products that are allowed to enter the USA under the NAFTA provisions, in order to protect the American economy from non-NAFTA maquila outputs. The underlying principle of the article is that maquila products must contain a minimum percentage of materials coming from member countries to enter free of duty. That is why imported inputs from non-member countries for the EMI — coming generally from Japan and China — have an import duty of between 0 to 30 per cent, unless it is demonstrated that they cannot be supplied by Canada or the USA, in which case, they are subject to a tax of between zero and four per cent. These are known as the 'sectoral programmes' (Sargent & Matthews, 2001: 5). These measures were taken to assure that the EMI 'would not harm the interests of the member countries', and that it could operate without changes within the spirit of the Treaty.

In sum, little has changed for the EMI in Mexico, since there has been no fundamental geographical shift in its assembly activities after the NAFTA was signed and its legal status has not been altered. Although more non-American maquiladoras have entered the country, most are owned by, or work for, American companies. Moreover, inputs for the EMI are overwhelmingly American and the final destination of their products is usually the USA. Under

[16] In fact, the NAFTA opened the way for North American products to enter Central and South American markets with which Mexico has trade agreements.
See http://www.sre.gob.mx/belice/economia/mexicoexporta.ppt

NAFTA provisions, Mexico was denied the possibility of assembling for foreign companies that use inputs that are other than American and sell in the American market.

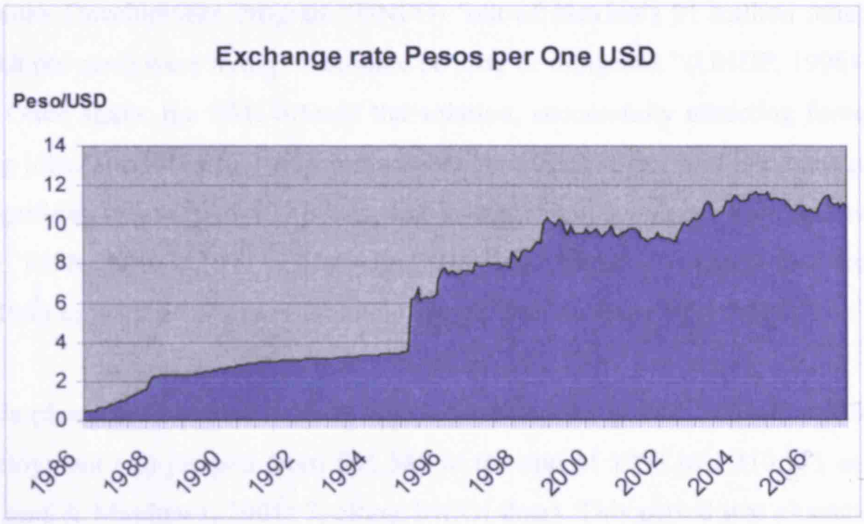
In essence, maquila activities have flourished since the liberalisation of trade and finance, but the reasons for the entrepreneurs to go off-shore remain exactly the same as before NAFTA was signed. 'While the NAFTA rules of origin and Article 303 may have played a role in motivating final assemblers to establish their "supplier migration" programs and adopt regional supply strategies, our interviewees emphasised that the need to access a low-wage labour force, the increasing emphasis placed on JIT supply relationships, and reducing "time to market" were the primary reasons why these large firms were requiring that their suppliers move to Mexico' (Sargent & Matthews, 2001: 13).

Similarly, 'according to a custom agent in the US', the legal provisions of NAFTA were very pro-business and established under the influence of large US TNCs (Sargent & Matthews, 2001: 11). NAFTA did not alter the well-established dynamics of the maquila industry between both countries, but in fact reinforced its mechanisms to assure the competitiveness of American brands in the USA, Mexico and the world.

2.2.3 The Latest Peso Crisis (1994) and the Most Recent Maquila Boom

The Ernesto Zedillo (1994–2000) administration began with one of the worst financial crises for the peso in December 1994. The emission of government bonds (Cetes and Tesobonos) represented a substantial part of Mexico's foreign investment that was not sufficiently backed with foreign reserves. Some 80 per cent of the US$85 billion attracted between 1991 and mid-1994 were portfolio investments, with direct investment accounting for just 20 per cent of the total investment. In addition, foreign reserves fell from US$26 billion to US$2 billion in a few months during 1994 (Cooney, 2001: 57). The overvalued price of the peso and the fictitious interest rates offered by the Salinas government could not be maintained by the new administration. Debt holders reacted negatively to the Mexican political crisis asking for their money back, for which the entrant government devalued the peso to less than half its value in December 1994 (Figure 2.9).

Figure 2.9: Mexican Peso Exchange Rate 1986–2006



Source: INEGI (2007)

An immediate bail-out package was put together by President Clinton and the IMF to save the Mexican peso and stave off the threat of economic depression. One of the largest loans in history was put together, amounting to US$50 billion, of which US$17.8 came from the IMF — more than twice the total it lent to all other countries in 1994. Such loans, however, 'came with the usual strings of structural adjustment attached: deeper government cutbacks in spending, increased taxes, and further reductions in workers' wages' (Cooney, 2001: 57).[17]

The economy contracted during 1995 as the result of the subsequent devaluation of the peso, increasing inflation and the lack of credit for small and medium-size businesses during the restructuring of the Mexican banking system.[18] In addition, many small and medium-size manufacturers went bankrupt after the signing of NAFTA, as they were unable to compete with incoming products (Fleck & Sorrentino, 1994; Cooney, 2001; Cypher, 2001; Salas, 2001; Parrado, 2005; Morris & Passé-Smith, 2007). It is estimated that in 1995 up to two thirds of the 36 million economically active Mexicans were underemployed or unemployed. Only 9.37 million had full-time permanent jobs, with access to the public health system, pensions, the minimum wage and other forms of protection. It is no wonder that GDP fell spectacularly in 1995, dropping by 6.2 percentage points, which signified a drop of 8.6 per cent in terms of GDP per capita (Cooney, 2001: 58; Ochoa & Wilson, 2001; see also Cypher, 2001; Salas, 2001; Parrado, 2005; Morris & Passé-Smith, 2007).

[17] See appendix p. 386 to 391 for macro economic data.
[18] That culminated in the Fobaproa, a public debt mechanism to be paid by tax payers.

It was estimated that around 60 per cent of Mexicans lived in poverty in 1995. According to the United Nations Development Program (UNPD) 'out of Mexico's 91 million inhabitants, 37.2 million (40.8 per cent) were living in extreme poverty or indigence.' (UNDP, 1996) (in Cooney, 2001: 59). Once again, the EMI offered the solution, successfully attracting foreign currency and creating jobs. The IMF reported a remarkable growth of 30 per cent in the maquila industry in 1995, signifying the entry of 800 plants, employing 250,000 workers from the end of 1994 to 1996 (IMF, 1998; INEGI, 1997 in Cooney, 2001: 55). Mexico's exports rose from US$51.8 billion in 1993 to US$166.4 billion in 2000 (Secofi, 2001 in Bair, 2001: 1885).

The maquila plants in their fourth phase enjoyed spectacular growth, comparable to that of the third: 'employment (...) jumped from 546,588 at the end of 1993 to 1,310,171 as of January, 2001' (Sargent & Matthews, 2001: 7, citing INEGI data). This period was characterised by an unprecedented growth in FDI, but it has been argued that such growth was the result of the recent changes in legislation or the signing of NAFTA. However, the impact of NAFTA in the sector was limited: it did not alter the essential nature of the maquila industry nor its legal provisions in a way that would redefine maquila activities. It is, therefore, difficult to attribute maquila growth in this period to NAFTA as has often been done by maquila supporters.

Rather, such growth is better explained by: 1) the growth of the US economy under the Clinton administration; 2) competition from Asian products in the world market; 3) the deterioration in Mexican salaries (Feenstra, 1997; Weiler & Zerlentes, 2003); and 4) the promotion of the industry as the sole development policy by the Mexican government (Sargent & Matthews, 2001). The development of the EMI since its inception can be explained in terms of a series of global economic changes and the redefinition of Mexican-US partnerships. The signing of NAFTA can be seen as the culmination of the Mexican-US economic 'integration'.

Nevertheless, two production incentives under NAFTA could contribute to an explanation of maquila boom in that period: 1) the complete elimination of US import tariffs on Mexican exports; and 2) the opening up of the Mexican market to maquila outputs. Both are seen to have had only a minor impact in the development of the maquila industry, since the tariffs paid were already very low, and the items produced are more marketable in the US market, with only minor penetration in Mexico (given the limited purchasing power of the majority of Mexicans) (Weiler & Zerlentes, 2003: 285).[19]

[19] *Ibid.*

The evolution of the EMI in this last decade has been twofold. On the one hand, more second generation maquiladoras came in, thus bringing a shift in production, with many plants moving 'from labour intensive, one-product assembly lines to more highly capitalised, flexible and multi-production facilities' (Carrillo, 1989a; Wilson, 1996; Ramírez, 2001; Weiler & Zerlentes, 2003: 287). More just-in-time processes were incorporated and labour intensive maquiladoras modernised, both through technology and resource management practices (Carrillo, 1989a; Wilson, 1996; Carrillo & Hualde, 1996; Ramírez, 2001; Rivera & Maldonado, 2004). A few plants in the automobile industry incorporated more new technology, research and development, and more participative labour practices, in what is recognised as a 'third generation' of maquiladoras (Wilson, 1996; Carrillo & Hualde, 1996).

On the other hand, the textile and apparel maquilas have also multiplied and are characterised by intensive labour activities, low investment and poorly skilled labour (Anderson, 1990; Kopinak, 1995; Fleck, 2001; Katz & Correia, 2001; Carrillo & Santibañez, 2001). Although the entry of Asian and European plants into the industry was important, US-owned maquiladoras tend to predominate by and large (70 per cent of the total FDI), and the US market is still the final export destination for 90 per cent of the goods (Villafuerte, 2004).

Third generation maquiladoras represent the latest stage in the evolution of assembly activities in Mexico (Rivera & Maldonado, 2004). These give hope to the supporters of the sector, since more capital intensive activities are taking place, and notably the incorporation of qualified men into the industry has eased the image of maquila plants as sweat-shops exploiting young women (Carrillo & Hualde, 1996; Carrillo & Hualde, 1997; Contreras et al., 2006). Just-in-time processes are more common in maquila operations and more technology-dependent posts and a culture of team work characterise the automobile maquiladoras particularly.

2.2.4 The Maquiladora 'Industry': An Option for the Future?

The PAN under Vicente Fox (2000–2006) continued to maintain and promote the maquila industry. One significant difference is that the promotion of the EMI has recently taken place more through state government initiatives rather than a highly institutionalised and centralised federal policy, a tendency that was first noted in the late 1980s (Trejo, 1989). This can be explained by the inertia in the development of the sector and in the implementation of market-oriented mechanisms under the NEM. The new administration prioritised government decentralisation and more participation of private agents in the economy, which certainly

encouraged state government efforts to attract FDI. On the other hand, further adjustments and measures to facilitate maquila operations were defined by the National Council for the Export Manufacturing Industry (CNIME).[20]

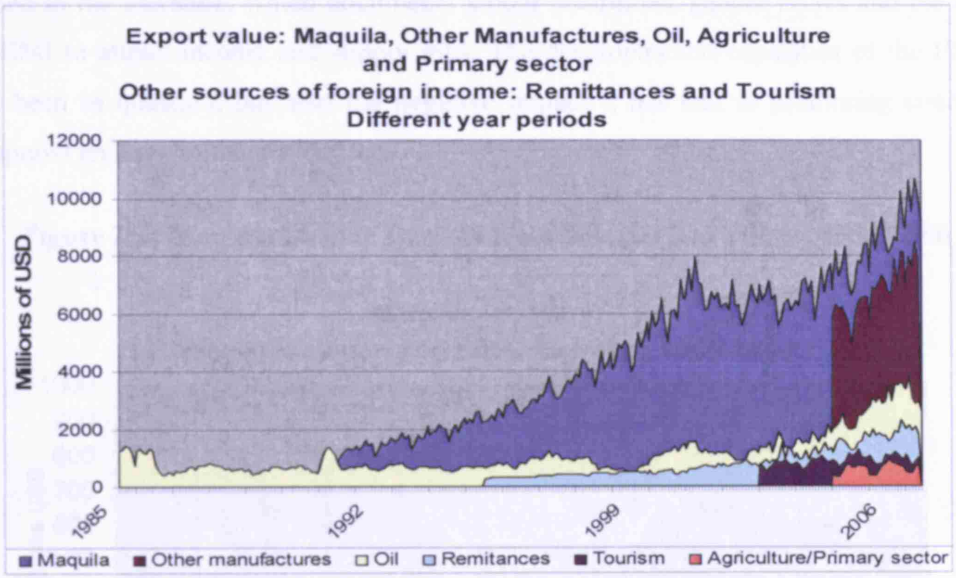
The last maquila decree published in October 2003 took on board the remarks made in the 30th Maquila Industry Council Meeting held in Guadalajara, which confirmed that the institutions created to encourage the development of the sector since the 1970s have remained functional until the present day. The resolutions proposed a redefinition of 'twin maquila' and 'maquila operations', and reduced the paper-work required to install maquiladoras. The government is required to authorise or deny maquila instalments within no more than 15 days, and without the need to show a real estate contract to prove the location of the plants (Islas, 2004).

Moreover, since the maquila sector is authorised to sell up to 50 per cent of its products in the local market, more medium and small maquila operators — once targeted for illegally selling merchandise in the country, and hence referred to as 'phantom' maquiladoras — can be certified through the Customs Law. The Customs Law was reserved for maquiladoras that added a minimum value of US$200 million a year.

All these measures reflect a renewed effort to facilitate and promote maquila activities, but, above all, they show how the Mexican government has adapted the maquila to suit the demands of its investors (TNCs) in an increasingly liberalised, global economy. As we can see, the export value of the EMI remains by far the highest in the country, followed by other industrial activities and oil (See figure 2.10).

[20] In Spanish, *Consejo Nacional para la Industria Maquiladora de Exportacion (CNIME).*

Figure 2.10: Mexico's Export Value in Millions of Dollars by Sector (different periods)



Source: INEGI (2007)

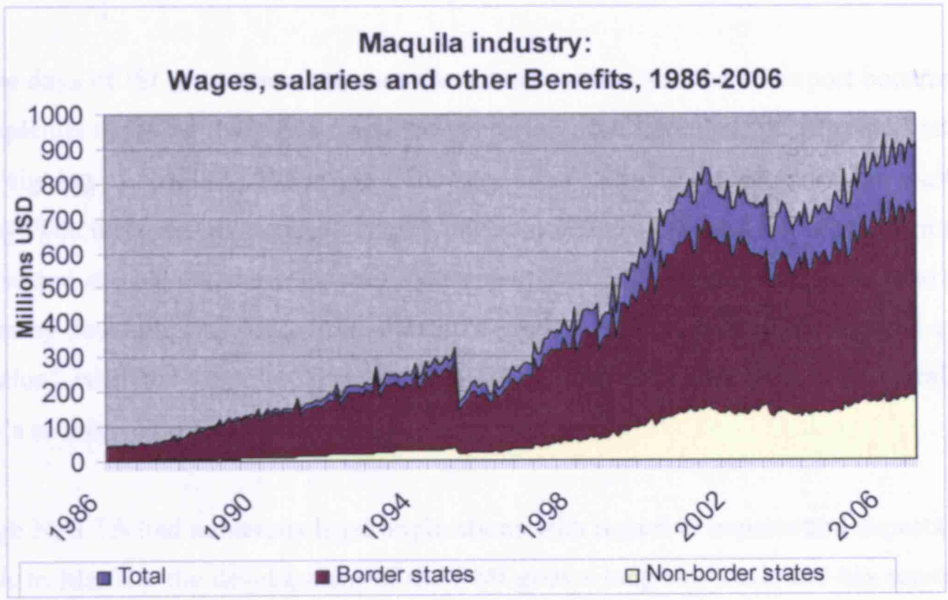
Despite the total support of the Mexican government, the EMI showed a worrying retreat between 2000–2003, explained by the US recession and the even cheaper labour force offered in China (see Figures 2.3 and 2.4). Exports fell by an average rate of 9.79 per cent per annum, representing a decrease of US$14,801 million in exports and of US$2,483 million in imported inputs between 2000 and 2002 (Islas, 2004: 85; see also Canto & Cruz, 2004). Similarly, between 2000 and August 2003, an average of 1.74 plants were closed per day, with the loss of 298,512 jobs (Islas, 2004).

However, a net recovery started to take place in mid-2003, leading to a more stable situation today. By July 2004 the industry was showing a remarkable recovery, gaining ground on the Chinese competition. New firms are expected to enter the industry and it is predicted that 'pioneering' firms will establish more plants, mostly in the north (Financial Times, 2004). Moreover, the lack of any alternative development policy and the intention to implement the so-called 'Plan Puebla-Panama' signifies for many the establishment of a maquila corridor from central Mexico to Central America (Canto & Cruz, 2004). Despite the increased income that maquila operations have brought to Mexico (see Figure 2.11), it is not at all clear whether the EMI is capable of developing the Mexican economy and achieving its integration in the world productive chains.

There is extensive literature discussing the impact of the EMI on the Mexican society and economy, particularly since the 1980s, when the EMI became a significant sector of the

economy. Fears of the 'maquilisation' of the country were justified, and many such concerns are expressed in the literature, which documents labour conditions, gender issues and the capacity of the EMI to attract income and supply jobs. The developmental capacities of the EMI have always been in question, but also the negative impact it has had in promoting uncontrolled urban sprawl and environmental damage.

Figure 2.11 Maquila Income Derived from Salaries and Wages, 1986–2006



Source: INEGI (2007)

Conclusions

As we have seen, the EMI has grown consistently since 1965. Despite a few years of crises, the EMI developed abruptly in some periods, while in others growth has been steadier. What matters is that succeeding government administrations have ensured the development of the EMI by changing trade laws, creating development programmes and *ad hoc* institutions to facilitate the installation of maquiladoras, initially along the northern border, and later all over the country. Institutional and legislative changes, along with government investment, have been at the heart of the promotion of the EMI.

Although the prominent position of the EMI today comes as no surprise in the context of globalisation and neoliberalism, four decades ago it was hard to imagine that the country would rely so heavily upon the maquila sector. Today, income from maquila value added represents around 3.6 per cent of the national GDP and maquila exports account for 52.6 per cent of non-oil exports. Although assembly operations have evolved, and plants are scattered throughout the

country, peso devaluations, economic crises, debt, migration and unemployment have accompanied the maquiladora boom. In addition, peso devaluations were more than once used to reactivate maquila installment, evincing the country's growing dependence on foreign investment and on the maquiladoras to provide jobs. Despite that situation, an examination of the different phases of maquiladora development shows a decisive position on the part of succeeding administrations to back and augment the position of the maquiladoras in the national economy.

From the days of ISI (protectionism, state-owned enterprises and the oil-export bonanza) to the total implementation of the NEM (rapid privatisations, the liberalisation of trade and finance and the signing of NAFTA), the maquila industry has decisively gained ground in the Mexican economy. The three maquila crises of 1976, 1982 and 2000–2003 and the subsequent recovery of the sector show how the Mexican government had little option but to support maquila activities by devaluing the peso. In a context of gradual economic liberalisation and economic 'integration' with the USA — through NAFTA — the EMI has been the central axis of Mexico's economic policy.

Although NAFTA had numerous legal implications with regard to imports and exports between the USA to Mexico, the development of the EMI goes a long way back and has scarcely been altered by NAFTA. At most, NAFTA merely facilitated the legal provisions to install a maquiladora and assured maquila investors that Mexico would support such activities even more than in the past. Given the importance of the maquila today, there are important questions that need to be asked: Is economic 'integration' (as it is) desirable for Mexico? To what extent has an export-led strategy made the Mexican economy less vulnerable? Is dependency on foreign investment sustainable? To what degree have maquiladoras integrated the country to the global economy?

Although, as we will see in the next chapter, the development of the EMI has been accompanied by an evolution in assembly processes, by the diversification of assembly activities and notably by the penetration of the industry into the interior and deep interior of the country; it remains to be seen whether the maquila industry has fulfilled its developmental objectives (let alone sustainable development). As we will see, the pros and cons of the EMI have been discussed at length. A review of the critiques of the maquila industry will provide an initial ground for further discussion, and will provide a basis through which to interpret the results of the case study.

Chapter Three

ACADEMIC CRITIQUES OF THE EXPORT MAQUILADORA INDUSTRY

Introduction

The academic opinions with regard to the maquiladora industry have varied over time. During the first phases of maquila development (1965 to 1980) the sector was not the subject of much academic study, perhaps because maquila operations began as part of a broader regional economic policy, and thus very few academics envisaged its future development.[1] By the mid-1980s, as the maquila industry became a priority sector for northern cities such as Ciudad Juárez and Tijuana, the social, economic, urban and environmental impact of the maquiladoras became cause for concern. Some of these concerns were no longer an issue by the late 1990s — such as the predominant use of a female labour force — but others remained.

Today, having witnessed the evolution of maquila activities and the scattering of maquiladoras in the country, it is difficult to depict the industry uniformly. As the EMI developed, it became increasingly necessary to distinguish maquila operations and to find differences among maquila sectors and regions. There can be huge differences between maquiladoras. To adequately assess their impact, one has to distinguish the labour intensive maquiladoras from capital intensive ones and view the plants in terms of their location, the size of the plant, their parent company and management policies, among other factors.

Despite these differences, the questions that were initially posed to evaluate the capacity of the EMI to develop the country are still valid. Has the EMI achieved Mexico's integration into the world economy? To what extent has the EMI been a solution to unemployment? Has it raised workers' living standards? Has it modernised the labour force? How environmentally friendly are the maquiladoras after all?

The arguments used to justify or condemn the maquila industry have depended on the broader economic and political scenario in which the industry developed, and on its significance within the socioeconomic context of Mexico. Since the proliferation of literature on the maquila in the 1980s, detractors of the maquila industry have tended to focus on the poor working conditions and the meagre salaries that the workers receive.

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[1] In fact, there were very few works written on the maquila prior to the 1980s (see Sklair, 1988).

Fernández-Kelly (1983) characterised well what maquila activities meant to the opponents of the industry in an important phase of its development. It was generally seen as a provider of 'low level assembly and mind-numbing-boredom work, tempered from time to time by tasks that are injurious to health and dangerous to life and limb'. Very high turnover rates, limited training and low wages were the most common trends emphasised by the opponents of the sector.

Moreover, the fact that for a long time young women formed the majority of the workforce in the plants, fostered an image of the maquila as a sweat-shop, a 'new' form of exploitation in the country (Fernández-Kelly, 1983; Stoddard, 1987; Fatemi, 1990; Sklair, 1993). Furthermore, maquila activities were associated with urban sprawl and with a lack of housing, infrastructure and inadequate environmental policies unable to assure minimum environmental protection, and ultimately reasonable health and safety standards for a growing population in northern cities (Young, 1986b; Gilbert, 1992; Gilbert, 1993; De la O, 2000; Liverman et al., 2002).

On the other hand, proponents of the Mexican maquila emphasised the positive impact of the maquila at aggregated levels, emphasising the jobs created, the training of the labour force and the astonishing increase in Mexico's exports. In their view, the *maquilisation* of the country was an option not fully exploited, which brought 'more good than evil' (Stoddard, 1987; Sklair, 1988; Menchaca and Solis, 1989; Carrillo, 1989; Negrete, 1989; Clement and Jenner, 1989; Aron, 1989; Wilhems, 1989; Trejo, 1989; Mungaray, 1989; Fatemi, 1990; Wilson, 1996; Carrillo and Hualde, 1996; Feenstra, 1997; Carrillo and Hualde, 1997; Bair, 2001; Rivera and Maldonado, 2004; Contreras et al., 2006). Maquila supporters still view the development of the EMI as an opportunity to integrate with the world economy and develop local industry (Silva, 2004; Gwynne, 2004a).

For many years, the maquila was seen as a regional phenomenon destined to remain so, because location was regarded as the determining factor that explained maquila investments. First, the lack of local suppliers for the EMI was seen as a serious barrier to the development of interior maquiladoras. Second, and more important, the costs associated with transporting goods over longer distances seemed destined to confine the maquila industry to the northern border region (Fernández-Kelly, 1983 39; Sklair, 1993; Brannon, James, and Lucker, 1994; Picou and Peluchon, 1995; Weiler and Zerlentes, 2003).

Some of the harshest criticisms of the maquila were tempered by the belief that maquila activities would remain along the border, and therefore would remain part of a regional economic policy. Stoddard (1987) and later Sklair (1993) claimed that the EMI had been unjustly stigmatised and its impact exaggerated. As a result, they emphasised the mutual interests that maquiladoras served for US entrepreneurs and Mexican policy-makers alike. Although both authors pointed out the competitive/capitalist nature of maquiladoras, and the inherent income disparities their activities entailed, they did not believe maquila activities were particularly exploitative, even less so when compared to the local industry — a comparison rarely made by the opponents of the sector.

According to Stoddard (1987) and Sklair (1993) the EMI could not be blamed for paying low salaries and for operating under difficult working conditions. As Sklair puts it, maquiladoras have always performed at the same level as local industries, or at least 'just as bad', keeping working conditions and salaries 'within the range of what local employment could offer' (Sklair, 1993).

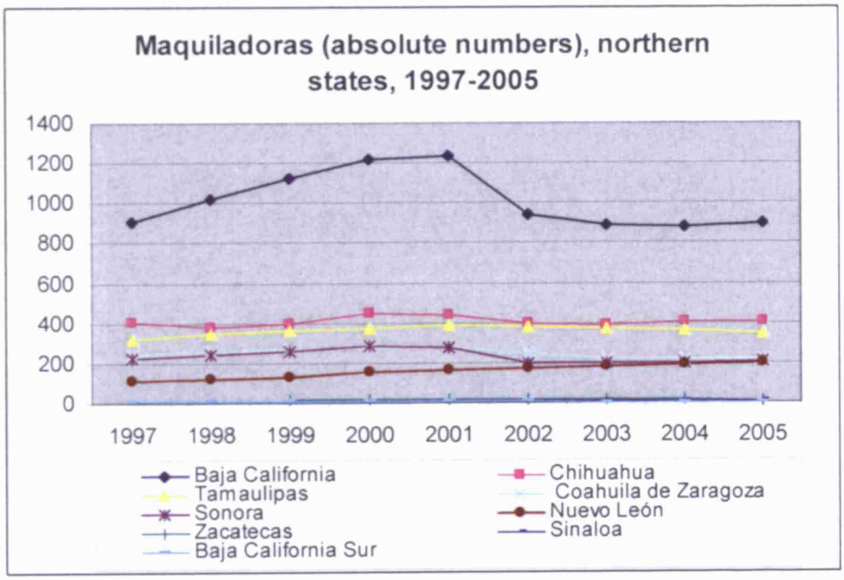
However, neither Stoddard nor Sklair appear to have envisaged the persistent and impressive development of the EMI, and the Mexican government's increasing reliance upon it to create jobs and attract foreign income. The importance of the EMI, today (for the Mexican economy and society) bears little resemblance to the EMI that was analysed by Stoddard (and to a lesser extent) Sklair. Furthermore, Mexico's local industry has been in outright decline since the government introduced measures aimed at liberalisation, and more particularly since the government increasingly relied on the NEM and joined the North American Free Trade Agreement (Zarsky and Gallagher, 2004; Gwynne and Kay, 2004). Despite all of this, the EMI is still promoted (now by state governments) as a solution to unemployment and a way of achieving the integration and modernisation of the country.

The evolution of assembly operations in northern and central maquiladoras, and the appearance of more labour intensive plants in southern states, have made the EMI a more varied and dispersed phenomenon (Wilson, 1990; Wilson, 1996; Fleck, 2001; Ramírez, 2001; Wilson, 2002; Weiler and Zerlentes, 2003; Rivera and Maldonado, 2004; Canto and Cruz, 2004) (see Figures 3.1, 3.2 and 3.3 p. 5 and 6). It is perhaps more necessary than ever to analyse maquila activities by location and through activity sector, since their impact on the Mexican economy and society varies as much as the plants themselves and the places where they are located.

There is evidence to suggest a growth in interior maquiladoras, although 77 per cent of maquila employment remains along the northern border (INEGI, 2007). Brannon and James (1994) emphasised that the expansion into the interior will incorporate more workers, whereas Picou and Peluchon, (1995) and Weiler (2003) consider that the future of the industry remains significantly confined to northern states (Wilson, 2002). Fleck (2001) emphasises that interior maquiladoras are usually labour intensive and therefore tend to employ women, who earn lower than average 'maquila wages'.

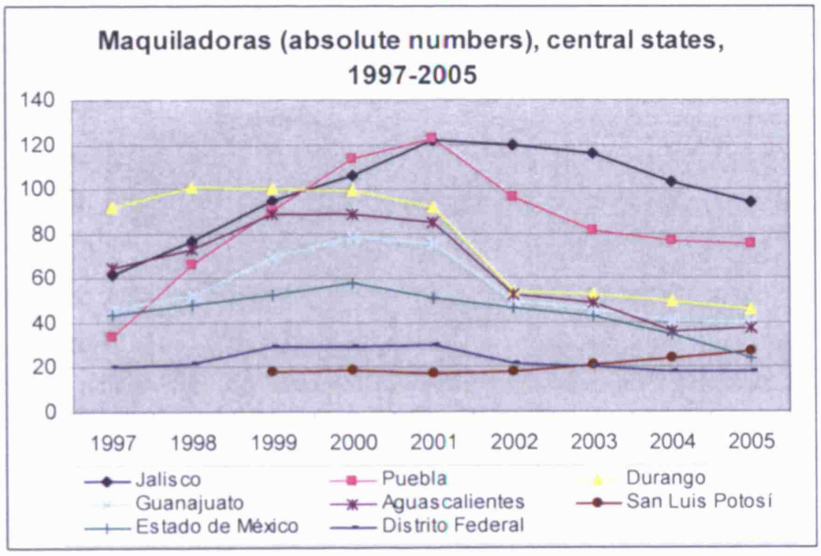
Although the growth in maquilas is far from the 1980s levels, there have been ups and downs in recent years, both in the north and rest of the country. The crisis of 2001 was a major concern for government officials, given the long term threat posed by China's growing economy unless Mexican maquila wages remain competitive. Figures 3.1, 3.2 and 3.3 show the development of the EMI in northern, central and southern Mexican states over the period spanning 1997–2005.

Figure 3.1: Evolution in the Number of Maquiladoras in Northern States, 1997–2005



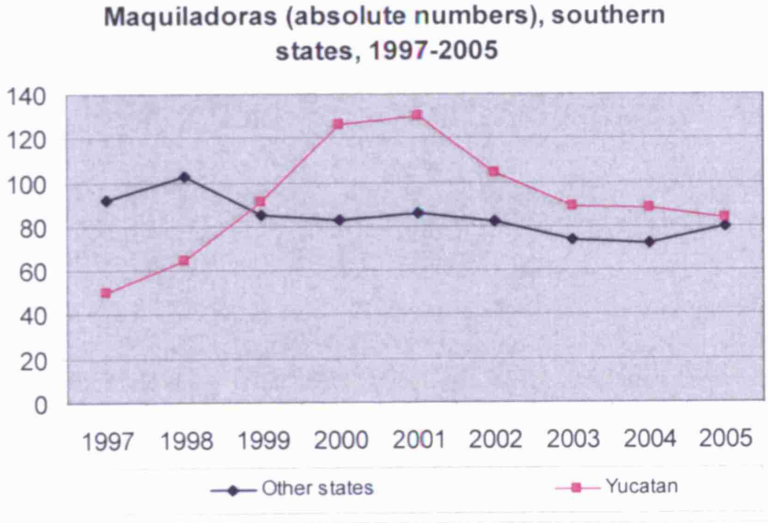
Source: INEGI (2007)
Note: The northern border states are Baja California, Chihuahua, Tamaulipas, Coahuila and Sonora.

Figure 3.2: Evolution in the Number of Maquiladoras in Central States, 1997–2005



Source: INEGI (2007)

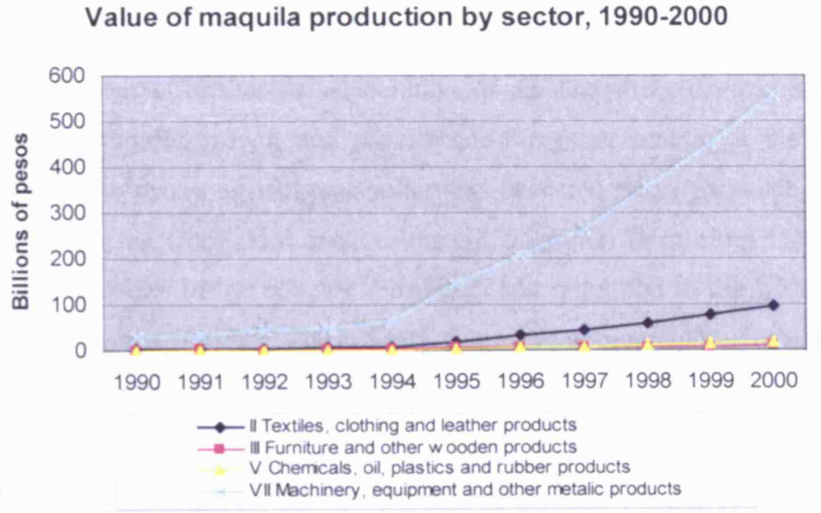
Figure 3.3: Evolution in the Number of Maquiladoras in Southern States, 1997–2005



Source: INEGI (2007)

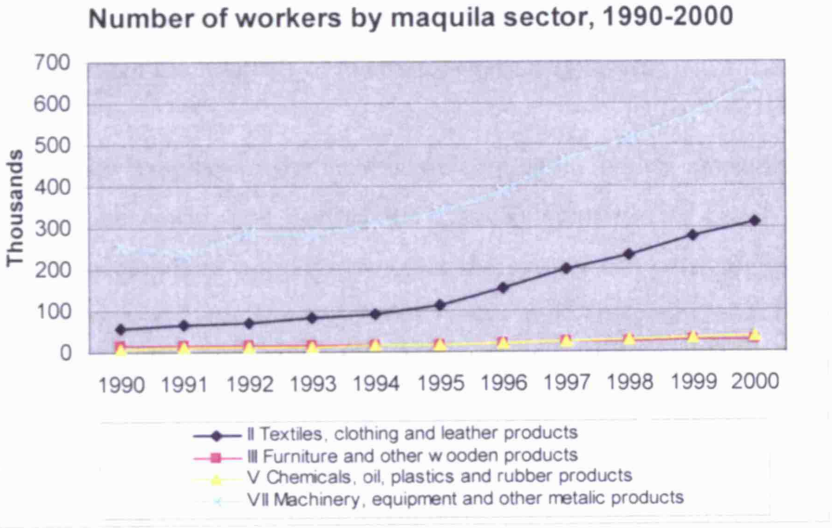
The evolution in the type of assembly work carried out by 'second' and 'third' generation maquiladoras has had an impact on the selection of workers and training, and, notably, has meant an increase in capital intensive activities — mainly in the central and northern border states (Wilson, 1990; Kopinak, 1995; Wilson, 1996; Fleck, 2001; Ramírez, 2001; Wilson, 2002; Weiler and Zerlentes, 2003). On the other hand, southern states seem to be in the phase of attracting labour-intensive maquiladoras, similar to those installed in the north of Mexico during the first phases of maquila development (Fleck, 2001). Figure 3.4 shows the increase in total production by maquila sector for the period 1990–2000 and Figure 3.5 shows the evolution of employment (by maquila sector).

Figure 3.4: Maquila Production (in Billions of Pesos) by Sector, 1990–2000



Source: INEGI (2007)

Figure 3.5: Maquila Employment (Thousands of Workers) by Sector, 1990–2000



Source: INEGI (2007)

As can be seen, the clothing and electrical/electronics maquiladoras — the latter appear under 'Machinery, equipment and other metallic products' which includes the automobile maquilas — account for most of the maquila employment, a constant trend since the EMI started to operate. In any case, maquila development in Mexico seems to be far from over, and more modern, high-technology maquiladoras, incorporating more male workers are expected, as are more labour-intensive, 'female', ones (Kopinak, 1995; Wilson, 1996; Fleck, 2001; Wilson, 2002; Canto and Cruz, 2004). In sum, maquila activities have been and will be a significant source of jobs for Mexico, particularly if no alternative to the NEM is foreseen.

However, despite the impressive growth in maquila employment, it is not clear whether the EMI has brought a solution to unemployment. By prioritising exports, and therefore seeking to integrate Mexico's economy into global markets, it could be argued that the NEM has constrained government efforts at the elaboration of an alternative development policy that could complement maquila growth and provide jobs in other sectors of the economy. For instance, the lack of a strong agricultural policy has been the cause for much concern, since most migrants still come from rural areas (although migration from cities has become more common as the population in the country urbanised) and migration to the USA has increased since NAFTA was signed (Cypher, 2001; Kelly, 2001; Demetrios, 2002; Gilbert, 2004; Silva, 2004; Kay, 2004; Gwynne, 2004b).

More generally, the sluggish performance of the Mexican economy over the last two decades and, notably, the incapacity of the government to create sufficient jobs, highlight the urgent need for a more critical analysis of the impact of the EMI, NAFTA and ultimately the NEM. The constant dependency on FDI and technology, and the whole package of neoliberal measures that the maquiladoras imply are said to reflect the imposition of social, economic and political dynamics that respond to the interests of the major capitalist players.

More recent critiques emphasise the neoliberal context in which assembly activities have flourished all over the world, and portray the maquila industry (for better or worse) as the prototype for the development opportunities that the system can offer to Semi Industrialised Countries (SICs) (Cooney, 2001; Cypher, 2001; Zarsky and Gallagher, 2004; Gwynne and Kay, 2004; Parrado, 2005). At the same time, sustainability principles and objectives increasingly influence policy discourse and (in theory) set developmental goals. However, no works evaluate the impact of the EMI under the sustainable development paradigm. Although they have varied over time, and have been expressed in different ways, the criticisms and defence of the maquila industry have not essentially changed, and have never been framed within the sustainability debate.

It remains to be seen whether the maquila will deliver on the promises that its promoters made (long before sustainability objectives were set). Whether it responds to sustainability objectives is even more doubtful. After more than 30 years of operations we should know what to expect in the future from the EMI. It is unlikely that the maquila industry will give more in the future than it has given thus far. What is needed at this point is a review of, and update on, the previous critiques of the EMI. First, this will aid an understanding of the impact that the EMI

has had on the Mexican economy and society. Second, it will enable me to characterise the Monty industries in Motul (my case study) and appraise their impact in the regional economy and the environment (Chapters Five and Eight). And third, it will then be possible to pinpoint the differences and similarities in the workforce employed by Monty and the EMI in the centre and north of the country (Chapters Six and Seven).

3.1 The Maquila Workforce

3.1.1 The First Phases (1965 to early 1980s)

The sudden incorporation of young women into maquila operations opened up the labour market to a sector of the population that had not previously worked formally or over extended periods of time. By targeting young females, the maquila employers actually increased the size of their potential labour pool, somewhat contradicting the fundamental purpose of the BIP. Contrary to what had been suggested at the outset by advocates of the EMI, the industry did not employ a peasant workforce left unemployed after the end of the *bracero* programme, nor the more recent generation of migrants going to the USA (Fernández-Kelly, 1983: 45-62; Stoddard, 1987; Aron, 1989; González and Barajas, 1989a: 38; Warner, 1990: 185-187; Demetrios, 2002).

In Fernández-Kelly's sample of Ciudad Juárez (1983) most maquila workers appeared to be urban migrants (64 per cent) coming from nearby states or other localities within the state of Chihuahua: 28 per cent from Durango, 14 per cent from Coahuila and 44 per cent from other parts of Chihuahua (Fernández-Kelly, 1983 58). This population had been living in Ciudad Juárez for an average of 14 years, meaning that young maquila workers (aged 17 to 25 years) had migrated when they were children, long before the implementation of the BIP. Only eight per cent of the workers in the sample had come from rural locations (Fernández-Kelly, 1983 59; see also Warner, 1990; and Carrillo and Santibañez, 2001).

The demand for workers who already lived in Tijuana or Juárez, combined with the specific recruitment strategies of the industry explains why, paradoxically, high levels of unemployment accompanied the development of the maquila industry in those cities (González and Barajas, 1989a). Plant managers preferred workers with an urban background, because they explained, they found them to be more 'stable', 'disciplined' and 'reliable' (Fernández-Kelly, 1983; Fatemi, 1990; Sklair, 1993; Kopinak, 1995; Wilson, 2002).

Maquila employers preferred young urban women, providing economic support to their parents

and relatives (in some cases their own children), to the larger 'traditional' labour force (men), who were prone to cross the border in search of better opportunities (Fernández-Kelly, 1983; Stoddard, 1987; Sklair, 1993). It is therefore not surprising that in Fernández-Kelly's sample more than 50 per cent of the interviewees said that their immediate family (fathers and brothers) included one or more illegal migrants. The combination of unemployment and underemployment were far worse than in other Mexican cities, reaching a staggering 30 per cent in the worst periods of the year (Fernández-Kelly, 1983; Barajas, 1989; Fatemi, 1990).

Many authors have emphasised that the high levels of unemployment in northern (maquila) cities like Ciudad Juárez and Tijuana resulted from the considerable number of people left unemployed after the end of the *bracero* programme and, notably, from the increasing migration to the USA. The so called 'pull-factor' attributed to the maquiladoras seems to have been (quite often) overestimated (Fernández-Kelly, 1983; Stoddard, 1987; Barajas, 1989; Fatemi, 1990; Spalding, 1999; Liverman, Varady, Chávez, and Sánchez, 2002). Male migrants headed for the USA are thought to seek jobs in the informal sector when they are unable to cross the border (Warner, 1990 186). The maquiladoras employed young women, members of families already residing in northern areas and only rarely 'new' migrants.

3.1.2 The Maquila Workforce and NAFTA

Although the constant growth of maquila operations certainly meant the incorporation of more women and then men into 'second' and 'third' generation maquiladoras, EMI employees represent about 31.5 per cent of the people working in the industrial sector (1.2 million workers in 2005) but only around four per cent of total employment (INEGI, 2007). Even though the range of maquila operations widened, and different types of work meant the inclusion of more men, the vast majority of the unemployed are not integrated into maquila activities as has often been proclaimed.

Many male workers (usually 'heads of family') that lost their jobs as a result of privatisations, the subsequent economic crises, agricultural decline and the implementation of NAFTA, have not been employed in the EMI (Fleck and Sorrentino, 1994; Cooney, 2001; Carrillo and Santibañez, 2001; Cypher, 2001; Salas, 2001; Kelly, 2001; Demetrios, 2002; Zarsky and Gallagher, 2004; Parrado, 2005; Morris and Passé-Smith, 2007). Although it might be argued that there is a need to modernise the labour market by incorporating women, as we will see in the next section, the maquila industry has not necessarily been a positive way to do so.

Until now, maquiladoras have not been able to discourage migration flows to the USA nor to provide temporary (or stable) employment for those waiting to cross the border. Nevertheless, during the NAFTA negotiations both the Mexican and US governments promoted maquila operations as a viable solution to alleviate illegal migration to the USA (Fleck and Sorrentino, 1994; Cooney, 2001; Cypher, 2001; Demetrios, 2002; Zarsky and Gallagher, 2004; Parrado, 2005). As Janet Reno, the Secretary of State for the Clinton administration, argued: 'We will not reduce the flow of illegal immigrants until these immigrants find decent jobs, at decent wages, in Mexico. Our best chance to reduce illegal immigration is sustained, robust Mexican economic growth. NAFTA will create jobs in Mexico — jobs for Mexican workers who otherwise cross illegally into America' (Demetrios, 2002: 43).

Quite the opposite, migration flows to the USA have intensified, particularly during the 1990s and from 2000 to 2004 (see Table 3.1). A number of authors have emphasised that more agricultural labourers have been migrating to the USA, especially since the NAFTA was signed, for the most part due to the incapacity of the Mexican labour market to provide jobs for a growing workforce (Barkin, 1998; Cypher, 2001; Salas, 2001; Kelly, 2001; Demetrios, 2002; Parrado, 2005). Internal 'rural-urban' migration may be a first step before attempting to cross the border, usually through the maquila border cities (Gilbert, 1992; Gilbert, 1993; Spalding, 1999; Liverman, Varady, Chávez, and Sánchez, 2002; CONAPO, 2007).

Table 3.1: Mexican Migrants to the USA, Absolute Numbers, 1960–2004

1960–1970	1970–1980	1980–1990	1990–2000	2000–2004
260 to 290 thousand	1.2 to 1.55 million	2.1 to 2.6 million	3.3 Million	1.6 million

Source: Conapo (2007)
Note: In four years alone (2000–2004), more than the total number of people working in the maquila migrated to the USA.

The maquila industry, the informal sector and temporary jobs in the USA (the latter two being among the most important suppliers of jobs for Mexican workers) have been complementary solutions to the household economy; since they are temporary, unstable jobs, and often imply leaving the nuclear family (Carrillo and Santibañez, 2001; Cypher, 2001; Salas, 2001; Demetrios, 2002; Zarsky and Gallagher, 2004; Parrado, 2005; González de la Rocha, 2006; CONAPO, 2007). Therefore, the impact of NAFTA in terms of alleviating migration has been modest to date, since the maquila has proven to be a temporary (cyclical) and limited source of employment, mainly for young urban workers (Carrillo and Santibañez, 2001; Demetrios, 2002). Table 3.2 shows a permanent increase in the remittances from Mexican workers at the USA since 1996.

Table 3.2 Remittances from workers at the USA, 1996-2006

	Million USD
1996	4 223.7
1997	4 864.9
1998	5 626.8
1999	5 909.6
2000	6 572.8
2001	8 895.3
2002	9 814.5
2003	13 396.2
2004	16 612.9
2005	20 034.9
2006	23 053.8

Source: INEGI (2007)

In comparison with other Latin American countries, Mexico has benefited from remittances from the USA more than any other country by far. Table 3.3 shows comparative figures on earnings from remittances for selected Latin American countries. As we can see, Mexicans living abroad send between seven to eight times more money than other Latin Americans. Furthermore, income from remittances was 12.5 times that of maquila salaries in 2001 (Tables 3.3 and 3.4).

Table 3.3 Remittances amongst selected Latin American Countries, billions of USD

	1999	2000	2001	2002
Latin America and the Caribbean	16.9	19.2	22.6	25.6
Brazil	1.5	1.4	1.5	n.a.
Colombia	1.3	1.6	1.8	n.a.
Dominican Republic	1.6	1.8	2	n.a.
El Salvador	1.4	1.8	1.9	n.a.
Mexico	6.6	7.6	9.9	n.a.

Source: World Bank (in Sotelo, 2004)

Table 3.4 Remittances and total maquila salaries millions of USD

	Remittances	Maquila salaries
1999	6600	554
2000	7681	720
2001	9900	787

Source: INEGI (2007) and ILO (2007)

3.2 Women and the Maquiladoras

One of the most widely documented aspects of the maquila relates to the gender of its workers. The fact that for the first 25 years women were the majority of the workforce has been the

object of much academic comment. The incorporation of a young female labour pool was seen as a new form of exploitation in the country that had serious implications for the social structure of the Mexican society.

Fernández-Kelly (1983) (F-K) was one of the first scholars to document and articulate that phenomenon. She successfully related maquila employment to Mexican household dynamics and the abuse of young, 'psychologically immature' women. She claimed that the preference of maquila employers for hiring young women was the result of patriarchal values 'well embedded' in Mexican society. F-K characterised the EMI as particularly abusive of women and explained the generalised social compliance with misogynistic/exploitative practices in the plants, by referring to Mexican household dynamics, which she argued, were reproduced in factory work (Fernández-Kelly, 1983; Fernández-Kelly, 1989).

Even though some academics may claim that the incorporation of men into the maquila industry contradicts Fernández-Kelly's findings, maquila activities are still characterised by the exploitation of young women — particularly in the clothing sector — and that relationship still has many implications at both household and social levels (Sklair, 1993; Kopinak, 1995 31; Cravey, 1997; Wilson, 2002; Maertz, 2003). Although maquila employment has now reached almost a 50/50 equilibrium between men and women, a review of Fernández-Kelly's work is necessary to understand the evolution of maquila employment. It is essential to any understanding of the individual and social implications of maquila jobs in those states that have more recently established a maquila industry, and particularly in those places where the — although relatively limited — incorporation of women into the labour pool is more recent (for example, Yucatán).

3.2.1 The Exploitation of Young Women in the Garment and Electrical/Electronic Maquiladoras of Ciudad Juárez and Tijuana (1965 to 1980s)

Fernández-Kelly (1983 and 1989) answers questions regarding the character of the maquila industry by describing the perverse dynamic that maquiladoras perpetuated (in many cases still do) by exploiting 'young, dependent' women who would hardly ever become independent wage-earners. Female maquila employees are said to be exploited as daughters, and later wives, 'when they are allowed to work'. F-K gives an accurate account of the difficulties women workers had to face, and in some cases probably still do, to get a job and keep it.

Workers were often required to prove more years in formal education than were expected of workers in other sectors of the economy, to pass pregnancy tests and to show proof of minimum periods of residence in the city. Most importantly, maquila recruiters clearly seemed to take advantage of generalised unemployment and of the limited opportunities that young women (still) have to enter the labour-market, particularly in the formal sectors of the economy (see also Cunningham, 2001; Pagán and Sánchez, 2001; Katz and Correia, 2001 for more detail on rural work markets and rural female employment).

In F-K's view, maquila jobs did not provide a solution to Mexico's unemployment, nor did they bring the incorporation of women into the labour market through well remunerated, respectable jobs; a point revisited by many authors (Amozurrutia, 1989; Fatemi, 1990; Anderson, 1990; Warner, 1990; Sklair, 1993; Kopinak, 1995; Cravey, 1997; Wilson, 2002).

For F-K, women's entry to the work-market disrupted family dynamics, in a few cases forcing men to take care of children, the house, or both, but most of the time obliging women to work double shifts. Women had to work at the factory and at home, or had to 'hire' female relatives to do the housework. All this took place without any significant improvements in household living standards (Fernández-Kelly, 1983; Kopinak, 1995; Cravey, 1997; Wilson, 2002). F-K explains how maquila activities began and later developed due to the availability of young, 'naïve', vulnerable women, willing to accept working conditions and salaries that most men would not. The men seemed to be attached to more 'masculine' type of jobs,[2] or preferred to try their luck by crossing the border in the belief they could be better paid. Others sent their daughters or wives to work at the maquiladoras while they waited for something better to come up (Fernández-Kelly, 1983).

F-K highlighted the capacity of managers to manipulate young women, something which she believed determined the managers' preference for women at that time, since it enabled them to keep order and production running without much complaint (see also Sklair, 1993 178 179; Tiano, 1994; Kopinak, 1995; Wilson, 2002; Colmenares, 2006). The women's willingness to take maquila jobs was mainly the result of economic necessity, but also, the workers' youth and their subordinate position in their own home (Fernández-Kelly, 1983: 72). Even though it seemed that discrimination against women in work was tempered, F-K made it clear that maquila jobs subordinate and exploit women in particular.

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[2] Most maquiladoras at that time employed women and were clothing, or electric/electronic maquilas.

On the one hand, young women are seen as 'supplementary income earners and temporary workers, while patriarchal traditions sanction their submission on the job and in the household' (Fernández-Kelly, 1983: 72). This prevents them from acquiring the same status of income-earners as men, from gaining more rights to attain a full identity as workers and from keeping a job for extended periods of time— which in part explains the high turnover rates that have prevailed in the sector (Fernández-Kelly, 1983).

On the other hand, the large female labour-pool available for maquila operations allowed maquila employers to impose conditions for hiring workers. The conditions set by maquila employers were often 'well above' the local industry requirements and seemed excessive considering the salaries and the working conditions that the maquiladoras offered. F-K reports that more than half of the workers she surveyed [3] had completed six years of formal education, in contrast with 3.8 years completed by the average worker in Mexico at that time (Fernández-Kelly, 1983: 52). Few recent works show updated figures on the average years of education of maquila workers, but reports on managers' preferences indicate that such preferences have been maintained (Anderson, 1990; Sklair, 1993; Kopinak, 1995; Cravey, 1997; Wilson, 2002).

F-K (1983) observed that maquila workers — predominantly women at the time — were paid considerably less than the average worker in the local industry. 'The gender differential in salaries,' she argued, 'is commonly explained by notion that women are essentially supplementary wage earners. Since it is assumed that women are dependent on men, their wage is only supposed to complement the earnings of the man "who has a family to support".' For that reason, women's salaries would only add to those of husbands and fathers, and therefore it was seen as acceptable that they were lower (Fernández-Kelly, 1983; Kopinak, 1995; Wilson, 2002).

Stoddard (1987) pointed out that F-K did not take into consideration the fact that those working in the local industry were qualified, unionised workers, for which they earned more money. Stoddard was against the idea that maquila operations had brought a 'gender differential in salaries', claiming, in reality, it was more a wage differential between industry sectors (Stoddard, 1987). However, more recently, Kopinak (1995), Fleck (2001) and Wilson (2002) found that there are, indeed, salary differentials between men and women maquila workers, particularly in third generation plants, where more capital intensive jobs are performed by men. These authors note a new form of gender segregation through the incorporation of men in more

[3] The size of her sample was 250 people, see also González and Barajas eds., (1989: 52).

skilful and well-paid maquila jobs, a point that is discussed in greater detail later on (Kopinak, 1995; Wilson, 2002).

In F-K, maquila managers reproduced social prejudices and abuse reflecting 'macho' values, while maintaining the satisfactory production rates and low wages sought by maquila entrepreneurs. As she explains, this is not necessarily discrimination on the basis of gender or nationality, but simply because the women's condition in this case can 'yield maximum profits and productivity under the least politically compromising circumstances' (Fernández-Kelly, 1983: 152). That is, female exploitation in the maquiladoras is possible due to — and reflects — local values and the position of women in the Mexican labour market and society, an observation partially shared by Stoddard (1987), Sklair (1993), Kopinak (1995), Wilson (2002), Cunningham (2001), Katz and Correia (2001) and others.

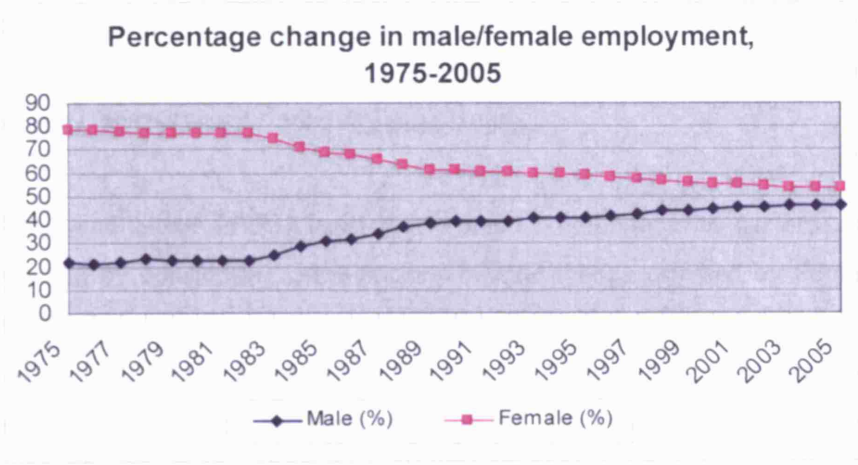
F-K points out that, in general, fathers are the heads of family taking the most important decisions and imposing family discipline on wives and children, leaving women to run the house. Most wage earnings are therefore given to higher authority members of the family, leaving the young women maquila worker with a 'small allowance for essentials' (Fernández-Kelly, 1983: 137). It is worth stating that the negative reactions to the incorporation of women into the labour force occurred in a context of severe unemployment among men, who often found themselves in a subordinate economic position. Some authors believe that a role reversal in family dynamics was gradually established — as the EMI developed — undermining traditional male authority in the family (Cravey, 1997).

Despite the incorporation of men into the maquila labour force, more recent studies indicate a prevailing tendency in the EMI to hire young women in conditions similar to those described by Fernández-Kelly. Tiano (1994) found that 61 per cent of the workers in her sample were single women, of which 62 per cent were daughters living with parents or siblings (Tiano, 1994: 134). Similarly, Barajas Escamilla and Sotomayor Yalán (1995) found that 69.1 per cent of the women in their sample were single, and that of these 93.8 per cent were the daughters of heads of households (cited in Cooney, 2001: 72).

Despite the pertinence in considering and characterising maquila jobs as predominantly female over the longer term, some estimates show there are an increasing number of men joining the workforce (Figure 3.6). Fleck (2001: 146) notes the rapid incorporation of men, but also the overall predominance of women, and a slight concentration of females in the garment, electrical

and other maquila sectors. Figure 3.6 shows the evolution of maquila employment by gender for the period 1975–2005.

Figure 3.6: Evolution of Maquila Employment by Gender, 1975–2005



Source: Wilson (2002) and INEGI (2007)

3.2.2 The Incorporation of Men into the Maquila Industry, Another Phase in the Evolution of the EMI?

For Sklair (1993: 179), the growing number of men working in the EMI signifies success in 'the reformation of global capitalism', and proves the establishment of an 'un-militant', 'non-unionised' and undemanding workforce irrespective of the gender of the workers (see also Kopinak, 1995 32; Wilson, 1996; Wilson, 2002).

Sklair argues that female employment in the maquiladoras merely responds to a phase in the implementation of new patterns in global production chains. He explains that once the image of the female worker is imposed on the sector, there is no reason to not hire men under the same scheme, as long as they provide similar managerial and productive advantages. '[Maquiladoras] employed women because it was quite naturally assumed, (…) that women could be constrained within the workplace to adapt themselves to the image of the "ideal" worker that the industry wished to create, better and faster than men. Once the image of the "ideal" maquila worker is institutionalised (…) job opportunities for docile, undemanding, nimble-fingered, nonunion and unmilitant men open up.' (Sklair, 1993: 173).

Therefore, it is suggested that the incorporation of Mexican females into the labour market is merely a point of transition in a larger capitalist process of globalised production; a process that

is common in developing economies relying on export-oriented activities (Stoddard, 1987; Wilson, 1990; Sklair, 1993; Wilson, 1996). That theory is proving useful to explain the increasing participation of men in assembly operations in Mexico, and the elimination of unions within the maquila industry. On the other hand, for maquila advocates, maquiladoras have been a source of emancipation for women and, to a certain extent, a source of social mobility (Stoddard, 1987; Mungaray, 1989; Anderson, 1990; Warner, 1990; Wilson, 1996; Castilla and Torres, 2000; Bair, 2001; Castilla, 2002; Castilla, 2004a).

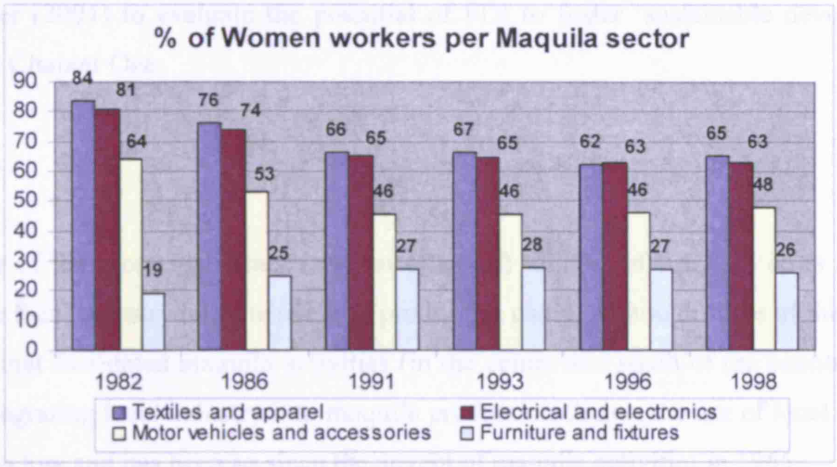
Stoddard (1987) and Sklair (1993) insist that women's willingness to perform maquila jobs must be explained by considering other reasons beyond those expressed by Fernández-Kelly, and point out that few maquila opponents do so. They believe maquila employment can truly be an opportunity for the emancipation and integration of women into the labour force, and that women often take life-changing decisions based on the possibility of getting such jobs (Sklair, 1993: 168; see also Kopinak, 1995: 31; and Fleck, 2001 on female maquila employment; Cunningham, 2001 on rural female employment; and Katz and Correia, 2001).

Other authors explain developments in the incorporation of men to the EMI broadly using Sklair's theory, but at the same time give two explanations based more on empirical evidence. In the first place, the incorporation of men results from a lack of maquila-grade-females after the explosive growth of maquila plants in the 1980s (Tiano, 1994; Kopinak, 1995; Wilson, 2002). Such a growth also explains the incorporation of 'older, partnered or un-partnered women with dependent children' into less capital-intensive plants (Kopinak, 1995).

Secondly, the kind of jobs offered by the new generation of maquiladoras were more stereotypically masculine, particularly with the entry of the automobile industry. Tamar Wilson (2002) believes that 'second' and 'third' generation maquiladoras practise a new form of segregation through training in more 'masculine' assembly jobs. This segregation — she argues —is mainly explained by traditional views about the capabilities of women and the role that they should play in society.

Kopinak, on the other hand, notes that the entry of more men to the industry might also respond to the need for overtime shifts, which opens up a market for male workers since practice shows that 'women are rarely allowed to work night-shifts' (Kopinak, 1995: 33). As shown in Figure 3.7, women tend to be concentrated in the textiles/apparel and electrical/electronics sectors, while more men work in the automobile and furniture maquiladoras.

Figure 3.7: Female Maquila Employment by Sector 1982–1996



Source: Wilson (2002) and Fleck (2001)

3.3 The Maquila Industry as a 'Traditional' Development Strategy

The capacity of maquiladoras to enhance economic growth and development has been the subject of much discussion. The maquiladoras have undoubtedly created jobs and increased exports; but, to what extent have they integrated the local industry into the world economy, improved working conditions, transferred technology or raised workers' living standards?

For Stoddard (1987) and Sklair (1993) the answer is simple. Maquiladoras have not promoted development in the country, but they cannot be blamed for lowering the standard of Mexico's underperforming industry. Although the EMI is largely characterised as an enclave economy, Sklair (1993) analysed, point-by-point, the most indicative macroeconomic variables to judge the developmental impact of the maquila industry. Notably, these were: 1) the creation of backward or forward linkages; 2) the retention of foreign currency; 3) the development of local skills; 4) technology transfers; 5) conditions at work; and 6) income distribution.

Other authors have also considered some (or all) of those aspects in order to evaluate the performance of the EMI, or more generally of FDI in LDCs (Stoddard, 1987; Carrillo, 1989; Barajas, 1989; Fatemi, 1990; Wilson, 1996; Feenstra, 1997; Zarsky, 1999; Gardiner, 2001; Fortanier and Maher, 2001). The interest in investigating the impact of the EMI through these six points and in characterising the maquila industry as either an option for development, or an enclave economy, is twofold. On the one hand, it will serve to determine the extent to which maquiladoras have satisfied the aspirations of the promoters of the industry to develop the local economy (even in the more conventional sense of development). And on the other hand, it will

serve to evaluate the maquila industry using similar criteria to those used by Gardiner (2001) and Fortanier (2001) to evaluate the potential of FDI to foster 'sustainable development', as presented in Chapter One.

A. Linkages

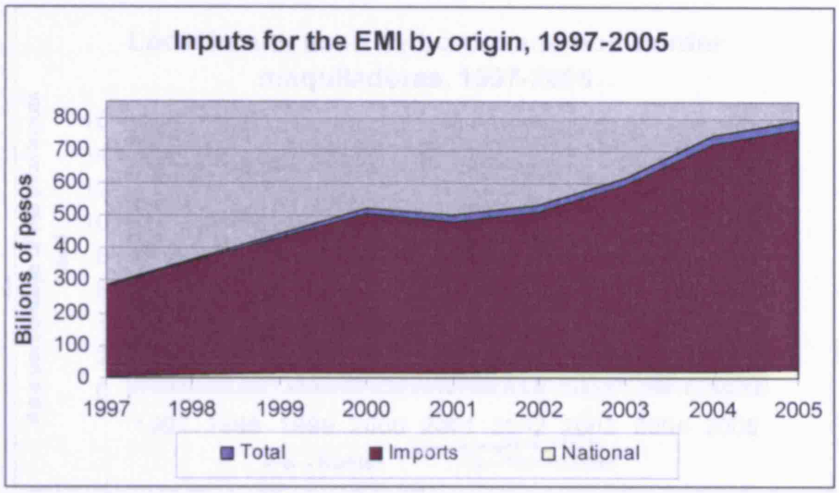
Perhaps one of the most significant (and uncontested) failures of the EMI is its incapacity to integrate the local industry into the maquila productive chain. Although some of the government regulations that facilitated maquila activities (in the centre and south of the country) were also aimed at integrating local industry into maquila production chains, the use of local inputs by the EMI remains low and has been so since the advent of maquila activities in 1965.

The most common argument used to explain the incapacity of the Mexican industry to supply the maquiladoras with local inputs is that Mexico's industry was protected for too long, and that not enough Research and Development (RandD) has taken place since that protection ended. Moreover, Mexico's economy seems to have opened up so fast that instead of giving an opportunity to local industry to supply the EMI, it was suddenly exposed to US products (and inputs) against which the Mexican industry could not compete. In addition, the evolution of maquila operations has made it [illegible] for local producers to meet the demands of an increasingly technological maquila industry, operating under Just in Time (JIT) production processes (González and Barajas, 1989a; Wilson, 1996; Feenstra, 1997; Ramírez, 2001; Montalvo, 2004).

Alderete (1983) explains the failure on merely internal grounds, pointing to a lack of quality and competitiveness on the part of Mexican products and an unreliability in delivery (in Sklair, 1993). These weaknesses date back at least as far as the 1970s, when observers noted that: 'Despite Mexican government efforts to encourage the use of national resources, very few of the raw materials and components used in the assembly operations come from Mexico' (Baird and McCaughan cited in Sklair, 1993: 197).

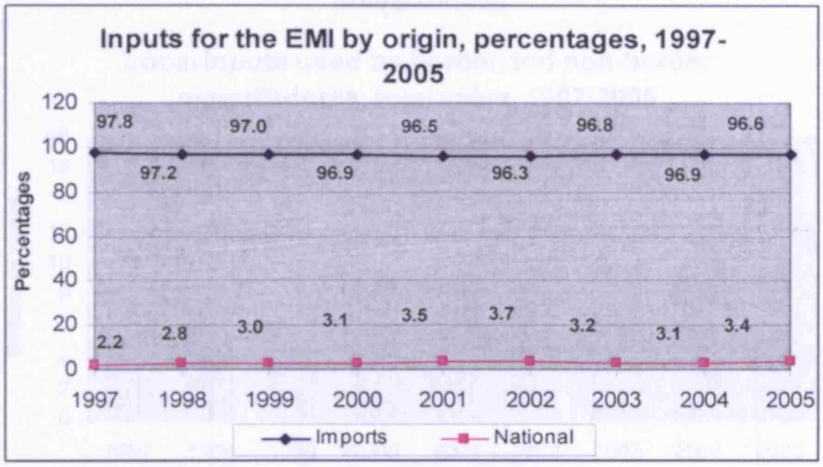
Since 1965, the figures showed that barely one or two per cent of the maquiladoras' supplies came from Mexican industry. Although the total value of Mexican inputs used by the EMI rose considerably in the period 1997–2005, today, only around 3 to 3.5 per cent of the total inputs are local (see Figures 3.8 and 3.9).

Figure 3.8: Total Maquila Inputs: Imported and Local, Absolute Value, 1997–2005



Source: INEGI (2007)

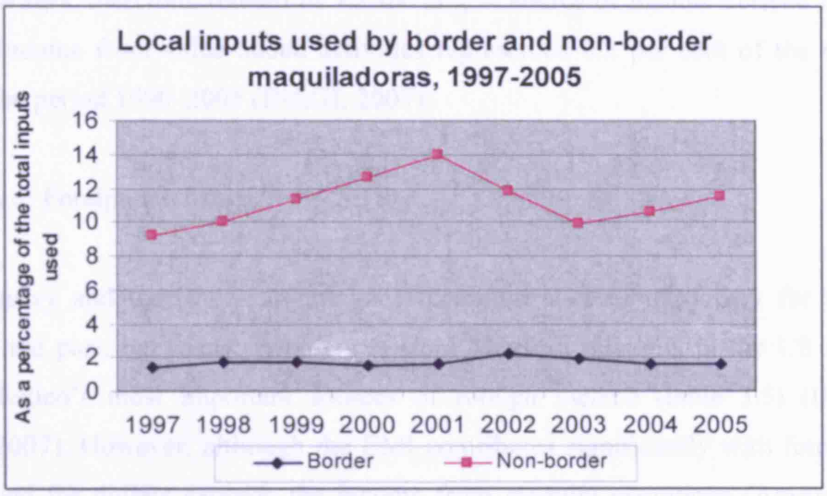
Figure 3.9: Total Maquila Inputs: Imported and Local, Percentages, 1997–2005



Source: INEGI (2007)

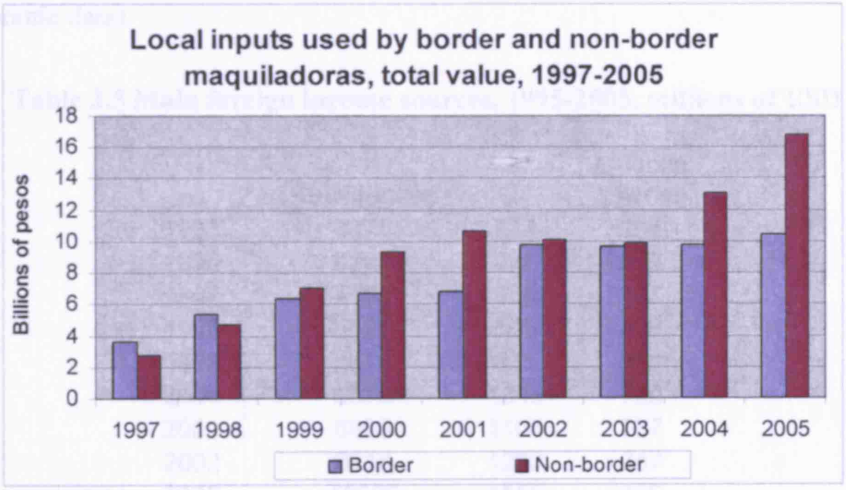
More recently, Ramírez (2001) and Wilson (1996), among others, note that 'interior' and 'second' and 'third' generation maquiladoras tend to buy more local inputs than the northern ones (González and Barajas, 1989b; Chrispin, 1990; Wilson, 1996; Feenstra, 1997; Ramírez, 2001; Rivera and Maldonado, 2004). Figure 3.10 shows the increasing utilisation of local inputs by non-border maquiladoras (with respect to border maquiladoras), and Figure 3.11 shows the value of such inputs.

Figure 3.10: Local Inputs for the Maquila (as a Percentage of the Total Inputs Used), Border and Non-border Maquiladoras



Source: INEGI (2007)

Figure 3.11: Local Inputs for the Maquila (Total Value), Border and Non-border Maquiladoras



Source: INEGI (2007)

In short, as all the reviewed authors agree, Mexican industry has been unable to meet the requirements of the EMI in any of the phases of maquila expansion (Fernández-Kelly, 1983; González and Barajas, 1989b; Fatemi, 1990; Sklair, 1993; Brannon, James, and Lucker, 1994; Wilson, 1996; Feenstra, 1997; Cooney, 2001; Ramírez, 2001; Weiler and Zerlentes, 2003). In contrast to the situation in the Asian NICs — and now China and India, the EMI has not promoted the development of local chains of production.

Apart from a few packaging and low value-added inputs or services, the maquila scarcely uses Mexican products. Thus, despite the increasing volume of Mexican inputs for the maquila, the aggregate impact on the local economy remains extremely low, since there have been relatively

few indirect jobs created, and little investment or production linked with a supply chain developed. Wages, therefore, remain by far the largest source of income derived from maquila operations. Income from value added activities represented 0.2 per cent of the total maquila income for the period 1990–2005 (INEGI, 2007).

B. Retention of Foreign Exchange

The oil industry and tourism were the most common sources of dollars for the Mexican economy in the past, but today, remittances from Mexican migrants in the US and the EMI added to Mexico's most important sources of foreign income (table 3.5) (INEGI, 2007; CONAPO, 2007). However, although the EMI contributes significantly with foreign reserves, Mexico's need for dollars exceeds the income from maquila operations (Amozurrutia, 1989 219; Sklair. 1993; Wilson, 1996; Feenstra, 1997; Robertson, 2000; Cooney, 2001; Cypher, 2001; Salas, 2001; Parrado, 2005; Morris and Passé-Smith, 2007) (See appendix p. 389-391 for macro-economic data).

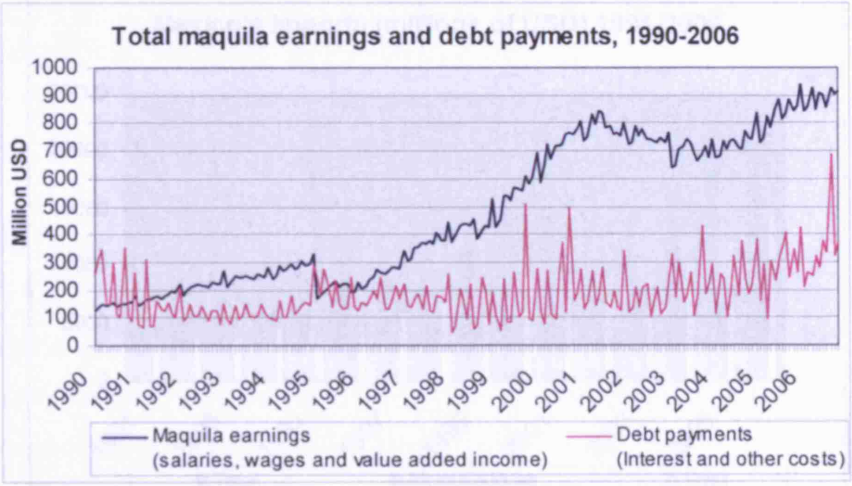
Table 3.5 Main foreign income sources, 1995-2005, millions of USD

	Remittances	Oil	Maquila salaries
1995	3673	724	205
1996	4224	987	262
1997	4865	956	367
1998	5627	609	427
1999	5910	831	554
2000	6573	1345	720
2001	8895	1100	787
2002	9814	1236	747
2003	13396	1550	696
2004	16613	1972	733
2005	20035	2658	833

Source: ILO (2007) and INEGI (2007)

On the one hand, Mexico's recurring debts (1976, 1982 and 1994) obliged the government to allocate a minimum of its foreign reserves to paying the interest on the debt and the debt itself, making it vital to capture as many US dollars as possible (see Figure 3.12). In addition, in a context of liberalised finance, the Mexican government needs to keep dollar reserves to control the price of the peso, and at the same time keep salaries competitive for the maquila industry. The last three government administrations have made a considerable effort to maintain a stable peso, which also enables the Mexican economy to be competitive (Zaman, 1990; Kopinak, 1995; Cooney, 2001; Cypher, 2001; Wilson, 2002).

Figure 3.12: Mexico's Debt Payments (Interest and Debt Costs) and Maquila Earnings, 1990–2006

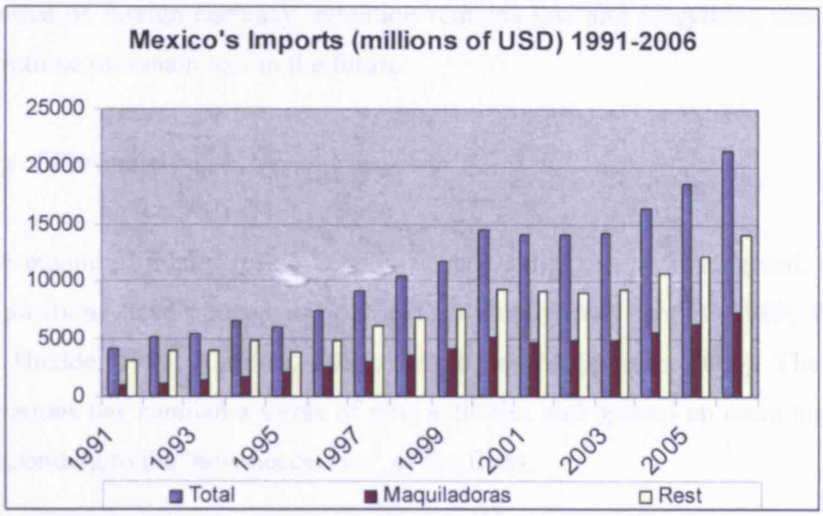


Source: INEGI (2007)
Note: see appendix for more data on the Mexican foreign debt and payments p. 389 and 397.

On the other hand, northern maquila workers and the 'entrepreneurial-elite' associated with maquila operations are known to spend most of their salaries and revenue in the USA. Since the advent of the BIP (1965), Mexican border residents have crossed to the American side to purchase most of their goods (González and Barajas, 1989a; Sklair, 1993). More generally, price and quality differentials have driven a significant number of Mexican consumers to go shopping in the USA. Even though 'interior' and 'deep interior' maquiladoras prevent the leakage of currency to the USA via workers' expenditure, more and more basic products from the USA (grain, corn and other basic consumption products) are sold all over Mexico.

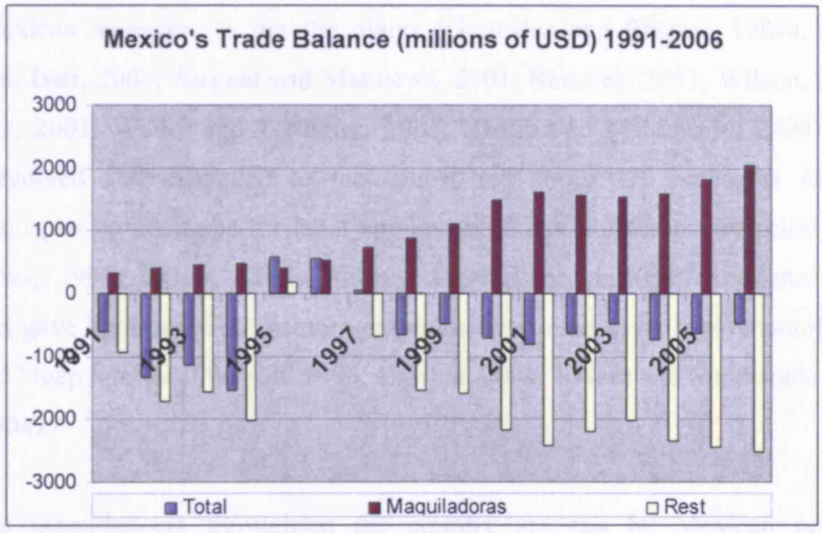
Since NAFTA was signed, Mexico's consumption of US products has risen considerably, making it even more difficult for the country to retain foreign currency (Figure 3.13). Mexico's trade balance has worsened visibly since the signing of NAFTA, and visibly acute since the recovery of the Mexican crisis of 1995 (Cypher, 2001; Salas, 2001; Zarsky and Gallagher, 2004; Parrado, 2005) (see figure 3.14).

Figure 3.13: Mexico's Imports, 1991–2006



Source: INEGI (2007)

Figure 3.14: Mexico's Trade Balance, 1991–2006



Source: INEGI (2007)

In addition, the Mexican government has collected little in taxes from maquila operations. As Mexico has opened up its economy, and in an attempt to assure foreign investments, taxes on the maquila operations have always been low (González and Barajas, 1989a; Fatemi, 1990; Sklair, 1993; Cooney, 2001; Islas, 2004). Today, maquiladoras do not pay taxes (Islas, 2004).

However, in a liberalised, global economy, competition for FDI is harsh. Low taxation is practically a condition to attract FDI and other types of investment (Deepak, Ashoka, and Panini, 2001; Loungani and Razin, 2001; Gropp and Kostial, 2001). More realistically, the demand for dollars has certainly been one of the reasons behind the support for maquila activities from the outset, all the time in the knowledge that those dollars would inevitably go

back to the USA (Gaventa, 1989: 199, 204). Thus, even though the maquila has been a very important source of foreign currency, retention remains low and everything seems to indicate that it will continue to remain low in the future.

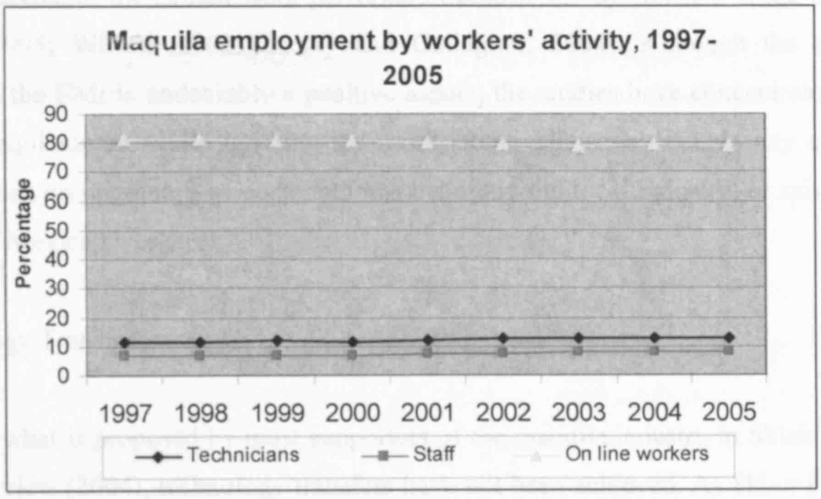
C. Upgrading of Personnel

Although the maquila initially rested heavily on non-skilled work, managerial, technical and supervisory positions have opened up to Mexican employees (Barajas, 1989; Wilson, 1996; Carrillo and Hualde, 1996; Ramírez, 2001; Rivera and Maldonado, 2004). The evolution of maquila operations has entailed a series of new activities and opened up more highly qualified positions, responding to the 'new necessities' of the firms.

Although the first maquiladoras were run by US personnel, who found it difficult to adapt to the Mexican working environment and lifestyle, maquila entrepreneurs rapidly saw the advantages of hiring Mexican managers to run the plants (González and Barajas, 1989a; Sklair, 1993; Wilson, 1996; Bair, 2001; Sargent and Matthews, 2001; Ramírez, 2001; Wilson, 2002; Mejías, 2002; Maertz, 2003; Weiler and Zerlentes, 2003; Rivera and Maldonado, 2004). As maquila operations evolved and expanded to the centre and south, US managers found it more convenient to open up positions for local employees to run the plants (González and Barajas, 1989a; Fatemi, 1990; Sklair, 1993; Wilson, 1996). The positive experience of northern maquiladoras gave confidence to maquila entrepreneurs to establish more maquiladoras in the 'interior' and 'deep interior' (Wilson, 1996; Castilla, 2002; Rivera and Maldonado, 2004; Canto and Cruz, 2004).

Today, most maquiladoras throughout the country are run by Mexican personnel. The advantages of hiring local managers are numerous. Mexican managers earn less than their US counterparts, they are familiar with the local working culture, they do not need to travel and they are efficient and reliable (Wilson, 1996; Carrillo and Hualde, 1996; Castilla, 2002; Rivera and Maldonado, 2004). For the enthusiasts of the industry, the fact that maquiladoras are now run by Mexicans is evidence of the modernisation of the labour force, although managerial employees account for barely eight per cent of maquila employment, and technicians for around 12 per cent (INEGI, 2007) (see Table 3.15).

Figure 3.15: Staff, Technicians and Assembly Line Workers as a Percentage of the Total Maquila Employment, 1997–2005



Source: INEGI (2007)

The upgrading of personnel from amongst the assembly line workers has characterised 'second' and 'third generation' maquiladoras, but has been particularly notable in the third phase of the maquila expansion (Wilson, 1990; De la O, 1994; Wilson, 1996; Carrillo and Hualde, 1996; Castilla, 2002; Rivera and Maldonado, 2004; Castilla, 2004b). The development of the automobile and more robotised electrical/electronics maquiladoras presented an opportunity for the incorporation of more skilled assembly line workers, although less technical plants (particularly clothing) are now also being run by local managers (Chrispin, 1990; Anderson, 1990; De la O, 1994; Wilson, 1996; Carrillo and Hualde, 1996; Ramírez, 2001; Rivera and Maldonado, 2004; Castilla, 2004b). Even though there are no clear figures to illustrate the extent of the upgrading of personnel in the maquiladoras, maquila advocates and detractors alike agree that such an evolution has taken place in EMI employment (González and Barajas, 1989a 25; Fatemi, 1990; Chrispin, 1990; Sklair, 1993 211; Wilson, 1996; Cooney, 2001 72; Ramírez, 2001; Rivera and Maldonado, 2004).

Now, more and more technical courses are being established in the high-schools and universities of 'maquilador' states (González and Barajas, 1989a; Fatemi, 1990; Wilson, 1996). For at least two decades, universities located in maquila cities have specialised in training young men and women to fill managerial and technical positions (González and Barajas, 1989a; Fatemi, 1990; Kopinak, 1995; Wilson, 2002). Third generation maquiladoras seem to have incorporated more men, both in managerial and technical posts, but most importantly — maquila supporters claim —the quality of the jobs has improved dramatically (De la O, 1994; Carrillo and Hualde, 1996; Castilla, 2004b; Contreras, Carrillo, García, and Olea, 2006).

For some, the upgrading of personnel remains dependent on the type of maquila operation and is not comparable to the skilled work performed decades ago by workers in the local industry (Kopinak, 1995; Wilson, 2002; Zarsky and Gallagher, 2004). Although the upgrading of personnel in the EMI is undeniably a positive aspect, the studies have concentrated on capital-intensive maquiladoras, while ignoring the more labour intensive ones. In any case, it is not clear how such an upgrading of personnel has benefited the local industry, or raised the living standards of Mexican workers.

D. Technology Transfer

Contrary to what is proposed by most supporters of the maquila industry in Sklair's (1993) and Montalvo's view (2004), technology transfers have not been achieved. As Sklair (1993) puts it, parent companies have no incentive to share their technology, simply because technology is the most valuable asset that a firm has. Since most of their revenue depends upon that technology, its transfer might undermine competitiveness. For Sklair (1993) the criterion of genuine technology transfer cannot be satisfied within the maquila or any other structure based upon FDI.

Technology is transferred only when a greater profit is envisaged, or when transfers do not entail a threat to the TNCs' market share or revenue. Such transfers will only occur when joint ventures are formed or when the technology is obsolete (Sklair, 1993: 236). No 'mergers' or 'joint ventures' exist within the EMI, because the disparities in technological capacities between TNCs and the local industry are too wide, and because there are no linkages between them.

Ramírez (2001) notes the evolution of maquila activities and relates them to technological and managerial changes, but does not portray them as technology transfers. He distinguishes between 'shelter' and 'complementary' operations, which are mostly carried in the automotive maquila sector. The 'complementary' model relies on JIT processes and encompasses a larger number of operations (carried out between 'twin plants') than the 'shelter' model (traditional assembly). Production processes are carried in more phases, with alternate intervention in manufacturing and assembly activities carried out by US and Mexican twin-plants (Ramírez, 2001: 1124). The organisational model is far more complex, with more suppliers, intermediate phases of assembly and distribution, and with more technological operations undertaken in the

Mexican plants — though designed, developed and owned exclusively by parent firms (Ramírez, 2001).[4]

Similarly, Rivera and Maldonado (2004) noted technological improvements in the operations carried out by sub-contractors in the Guadalajara electronics sector. The transfer of knowledge and expertise that they documented ranged from the manufacturing of cartons, packages and containers to the manufacturing and assembly of 'head-readers' for hard drives (see also Wilson, 1996; Carrillo and Hualde, 1996). However, the more specialised the training of personnel and the machinery delivered to subcontractors is, the more the subcontractor needs to keep 'modernising its production processes' and the more he depends on the parent company to sell its outputs. Such 'technological improvements' bear a closer resemblance to a 'takeover' than a genuine transfer of technology (and De la O, 1994; see also Castilla, 2002; Rivera and Maldonado, 2004; Castilla, 2004b).

More generally, Wilson argues that despite the incorporation of JIT processes into manufacturing, and the modernisation of the automobile industry, the maquiladoras remain a poor copy of modern industries. Given that maquila operations rely on cheap labour and at the same time on modern processes of production; maquiladoras may be seen as a 'caricature' of post-Fordism. 'The rise of flexible producers is not accompanied by an autonomous research and development capability, nor by economic economy. (...) United States producers are using the maquiladora industry primarily for Fordist manufacturers — especially in the interior — and the labour intensive assembly plants, especially along the border' (Wilson, 1990: 152).

Thus, the EMI does not seem to provide the technology transfers that could help local industry to develop and gain independence. Although there has been an evolution in the production processes of the maquiladoras, this has not meant the transfer of technology, simply because the national industry is not linked to the operations of TNCs and cannot compete with them. Research and Development within the EMI remains extremely rare (see Carrillo, 1989; Carrillo and Hualde, 1996 for a series of works on the automobile sector mainly; Carrillo and Hualde, 1997), and in any way supposes the transfer of technology to the local industry.

[4] He interestingly distinguishes two production strategies. One more automated and relying on 'world class' suppliers (Ford in Hermosillo) and another based on the intensive use of organisational technologies and using more local suppliers (Chrysler and General Motors in Ramos Arizpe) (Ramírez, 2001).

E. Working conditions

The contribution of maquila jobs to the Mexican working class is the subject of much dispute. Some authors do not accept the view that maquiladoras have brought only activities that are dangerous for workers, although they do not believe they have significantly raised the quality of Mexican labour either (Stoddard, 1987; Menchaca and Solis, 1989; Carrillo, 1989; Negrete, 1989; Clement and Jenner, 1989; Wilhems, 1989; Trejo, 1989; Mungaray, 1989; González and Barajas, 1989a; Fatemi, 1990; Sklair, 1993; Wilson, 1996; Feenstra, 1997). Others, on the contrary, persistently emphasise the exploitative nature of maquila jobs, highlighting dangerous activities and exclusionist practices, along with abuse on the part of the managers (Fernández-Kelly, 1983; Kopinak, 1995; Cooney, 2001; Wilson, 2002).

For Stoddard (1987) and Sklair (1993) the correct way to measure the quality of the jobs offered by the maquiladoras was to compare them with the jobs provided by local industry at the time. They both concluded that there was no major disparity between them. In Sklair's words: 'Environmental pollution and health and safety at work are all relatively uncontrolled, but this is not exclusive to the maquila but characteristic of the Mexican industry as a whole' (Stoddard, 1987; Sklair, 1993: 96; see also Cooney, 2001).

Other authors discovered particularly hazardous working conditions in the maquiladoras. The 'Support Committee for Maquiladora Workers' declared in 1996–1998 that many maquiladoras got away with not providing basic safety equipment such as gloves and masks, or installing ventilation systems (Cooney, 2001). More common are the reported abuses on the part of managers who 'force overtime, increase the length of the working day or work-week, increase the intensity of work, dock pay and hire and fire at will (especially workers who attempt to organise)' (see also Fernández-Kelly, 1983; Kopinak, 1995; Cooney, 2001: 65; Wilson, 2002). Fernández-Kelly (1983) adds that the chronic maladies associated with maquila operations are commonplace and type-related to the sectors of the industry (see also Kopinak, 1995; and Wilson, 2002).

Some advocates of the maquila see in the EMI a positive experience that enhances discipline and promotes more competitive attitudes amongst workers. For them, maquila employment entails positive externalities that help the labour market to mature and improve working conditions in the long run (Stoddard, 1987; González and Barajas, 1989a; De la O, 1994; Wilson, 1996; Feenstra, 1997; Castilla, 2002; Castilla, 2004b).

The literature is characterised by disagreement regarding the quality of the working conditions at the maquiladoras, mainly because differences in the size of the plant, the parent company and the industry sector mean that the conditions at work vary enormously from one maquiladora to another. What is certain is that maquila operations have evolved and most probably maquila workers now work in better conditions than they did 20 years ago (even in the labour intensive maquiladoras); but most of the time, unskilled work activities remain characteristic of maquila employment.

F. Income Distribution Derived from Maquila Operations

Throughout its history the maquila industry has been criticised for favouring the interests of the Mexican and US entrepreneurial class at the cost of the workers. Generally speaking, the beneficiaries of the industry have been TNCs and a reduced number of local elites and 'facilitators' (professionals, entrepreneurs, politicians).[5] Although some argue that the EMI has been the source of a multiplier effect in the border economy, the general distribution of such wealth does not seem to reach all social strata (Fernández-Kelly, 1983; Trejo, 1989; González and Barajas, 1989a; Warner, 1990; Sklair, 1993; Kopinak, 1995; Wilson, 2002; Weiler and Zerlentes, 2003; Zarsky and Gallagher, 2004).

Cooney (2001) describes the distribution of benefits derived from maquila operations as a closed circuit. The Mexican government benefits by obtaining foreign exchange earnings to pay the national debt, while the TNCs clearly benefit and maintain their competitiveness in the world markets (see also McCaughan, 1993). The polarised distribution of wealth that maquiladoras have maintained seems to have gone hand-in-hand with the sluggish performance of the Mexican economy (Föster and Pearson, 2002; World Bank, 2002). 'The most telling indicator is GDP growth. Between 1994 and 2002, GDP in Mexico grew at an average rate of only 2.7 per cent per year — less than half the 6.7 per cent average growth rate under the import-substitution policies of the 1970s. Even in the financially tumultuous 1980s, GDP grew an average of 3.7 per cent per year' (Zarsky and Gallagher, 2004).

The World Bank Report on Urban Poverty notes that both the moderately and extremely poor are concentrating in cities and that in 2002 there were five million more poor than in 1992 (World Bank, 2002). The report adds that in 2002, around 34 million Mexicans living in cities

were considered to be poor (seven million extremely poor, 27 million moderately poor) (World Bank, 2002; for more detail see Gilbert, 2004 and Gilbert, 2007).

Although northern Mexican cities have significantly less poor than central and southern cities, around 36 per cent of the urban population in northern states live in poverty (World Bank, 2002) (see Table 3.6). As most literature on the maquila points out, maquila workers' families are, without a doubt, part of the urban (more often moderately) poor (Young, 1986b; Kopinak, 1995; Cravey, 1997; Wilson, 2002). More specific figures on urban poverty and the characteristics of the poor (as characterised by the WB) are given in tables 3.6 and 3.7. As Staudt (1986) and later Carrillo (2001) showed, maquila workers' households have most of the characteristics of low income households showed in table 3.7.

Table 3.6: Urban Poverty in Mexico According to the World Bank, 1992–2002

Region	1992	1994	1996	1998	2000	2002
Extreme Poverty Incidence (% of population)						
North	8	8	19	14	7	5
Centre	18	18	33	26	16	14
South-Pacific	37	23	47	44	29	32
Southern Gulf and Caribbean	18	19	34	25	28	24
Mexico City	5	3	13	10	3	3
Moderate Poverty Incidence (% of population)						
North	35	38	55	45	30	31
Centre	52	53	70	63	52	48
South-Pacific	76	59	78	74	61	67
Southern Gulf and Caribbean	48	55	71	59	60	58
Mexico City	31	26	47	42	24	26

Source: WB (2002)
Note by the WB: Source: Own calculations based on ENIGH, using income poverty lines. ENIGH is only designed to be representative at a national, rural and urban level and not at regional level. These results should therefore be indicative.

Table 3.7: Selected Characteristics of the Urban Poor, According to the WB, 2002

	Extremely poor	Moderately poor	Non-poor
Average household size	5.8	4.6	3.6
Average number of children under 12	2.6	1.8	1.5
% of population living in dwellings with dirt floor	18.4	8.2	1.0
% of population in dwellings that are:			
borrowed	16.8	15.4	11.5
Rented	14.0	17.7	16.5
	Continue	***next***	***page***

[5] For González this was a positive aspect of the development of the industry, since it developed a local market for legal, accountancy and technical consulting services, among others (Gonzalez and Barajas, 1989: 22).

privately owned	66.2	64.2	70.4
other	3.0	2.7	1.5
% of population living in households where:			
The household head is illiterate	22.0	14.1	3.7
The household head has:			
no education, primary incomplete	56.7	43.4	18.9
primary complete	26.6	28.6	21.7
secondary complete	14.2	21.6	25.1
The household head works in the informal sector	41.6	34.3	21.6

Source: WB (2002)
Note by the WB: Source: Own calculations based on ENIGH (2002).

One of the main criticisms levelled at the EMI is that the industry relies on the maintenance and promotion of a very low minimum wage to keep maquila operations competitive (Kopinak, 1995; Cooney, 2001; Wilson, 2002; Weiler and Zerlentes, 2003) — particularly when China has such a low minimum wage. For some authors the minimum wage has served more as a 'wage-ceiling' to assure the competitiveness of the sector, rather than to ensure a minimum standard of living (Kopinak, 1995; Cooney, 2001; Wilson, 2002: 7).

In fact, maquila workers' wages have in general fluctuated, but have remained close to two minimum salaries and the minimum salary around ten times below the American minimum salary, 'for at least twenty years' (Barajas, 1989). Table 3.8 shows minimum salary comparisons between the US, Mexico and China in 2007. The minimum salary, today, in the US, is around ten times that in Mexico and China's minimum salary is around three times lower than the Mexican.

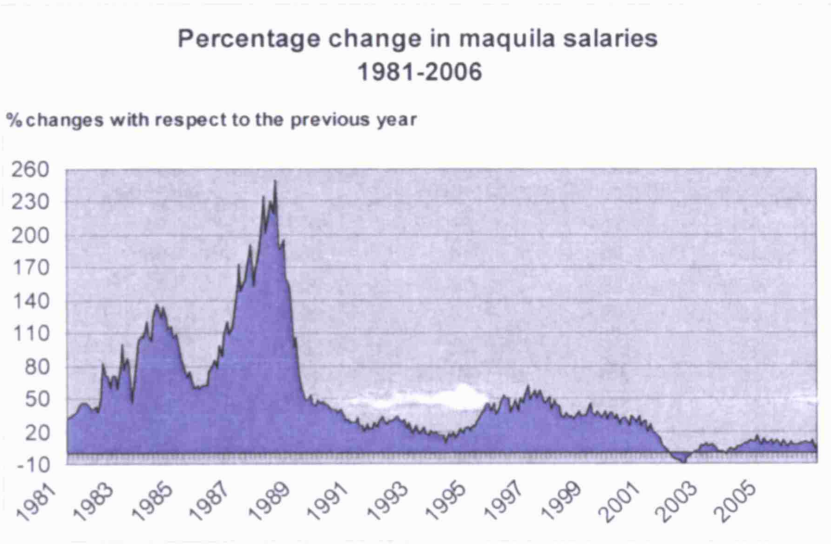
Table 3.8 Minimum salary comparison across countries, 2007

Minimum wage (USD/day) 2007		
US	Mexico	China
41.20	4.24	1.74

Source: calculated from ILO 2007

Figure 3.16 shows how maquila wages increased in periods of high demand for maquila labour and drop when they were overvalued (1980s to 1990). As seen in the previous chapter, maquila salaries during the period 1980s to 1990 — and later-on, were kept competitive mainly through devaluations. From 1991 onwards, maquila salaries have not grown at an impressive rate. On the contrary, they seem only to adjust to inflation rates — as do minimum salaries, and seem to have stabilised after the maquila crisis of 2001 (Figure 3.16, and Table 3.9).

Figure 3.16 Percentage Changes in Maquila Wages (Including Staff), 1981–2006



Source: INEGI (2007)

Although maquila wages have risen faster than the minimum salary (data is available from 1999 onwards), evidence in table 3.9 shows that maquila wages are only twice to 2.5 times the minimum salary for the period 1998-2003.

Table 3.9 average maquila salaries (on line workers) and (average) minimum salary in Mexico (pesos), 1994-2003

	Average maquila wage (worker/day)	Average maquila wage percentage change	Average minimum salary (worker/day)	Average minimum salary percentage change	Maquila wage as a ratio of the minimum salary	Maquila wage as a percentage of the minimum salary
1994	26.20	n.a.	n.a.	n.a.	n.a.	n.a.
1995	31.90	21.76	n.a.	n.a.	n.a.	n.a.
1996	39.48	23.76	n.a.	n.a.	n.a.	n.a.
1997	50.27	27.33	n.a.	n.a.	n.a.	n.a.
1998	59.48	18.32	29.95	n.a.	2.0	198.6
1999	69.71	17.20	31.91	6.54	2.2	218.5
2000	79.12	13.50	35.12	10.06	2.3	225.3
2001	91.59	15.76	37.57	6.98	2.4	243.8
2002	101.08	10.36	39.74	5.78	2.5	254.4
2003	102.80	1.70	41.53	4.50	2.5	247.5

Source: Sotelo 2004 and INEGI 2007

Table 3.10 shows that maquila salaries raised above inflation, the minimum salary and salaries in the industry sector, but not in a considerable proportion.

Table 3.10 Maquila wage, wages in manufacturing, minimum wage and inflation (current pesos and indexed 2000=100)

	Maquila wage (pesos/day)	Indexed maquila wage 2000=100	Average wages in manufacturing (employees) (pesos/month)	Indexed manufacturing wage 2000=100	Consumer prices, general index (2000=100)	Minimum wage (pesos/day)	Indexed minimum wage (pesos/day)
1995	32	40	1240	43	42	n.a.	n.a.
1996	39	50	1389	48	56	n.a.	n.a.
1997	50	64	1635	56	68	n.a.	n.a.
1998	59	75	2090	72	78	30	86
1999	70	88	2392	82	91	32	91
2000	79	**100**	2911	**100**	**100**	35	**100**
2001	92	**116**	3368	**116**	**106**	38	**107**
2002	101	**128**	3538	**122**	**112**	40	**114**
2003	103	**130**	3738	**128**	**117**	42	**119**

Source: ILO (2007) and Sotelo (2004)

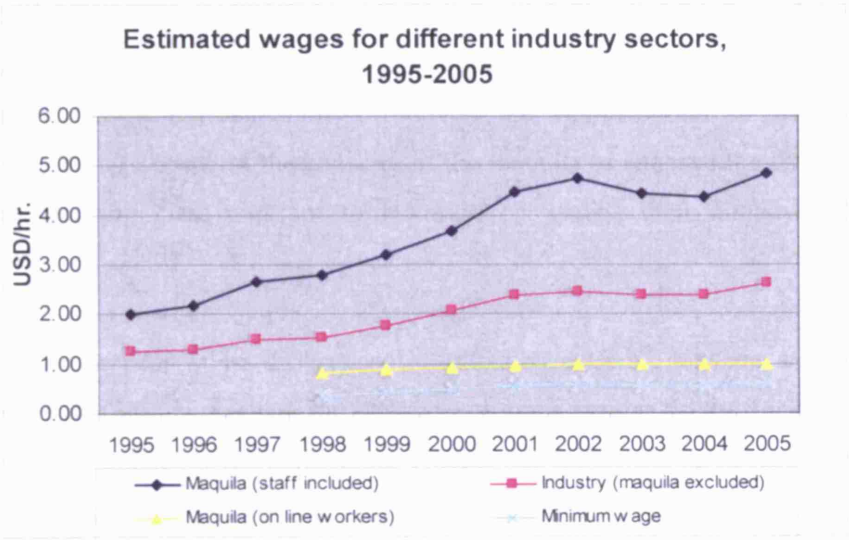
In any case, Sotelo (2004) affirms that the purchasing power amongst low income Mexican households has deteriorated since 1982, to the point that the minimum salary of 1992 only served to acquire 19% of the *canasta básica*. In 1982 the minimum salary allowed to buy 94% of it (Sotelo, 2004: 115). Orozco (1991) observes the decline of real wages in Mexico since 1977 and relates that decline to the development of the EMI (in Kopinak, 1995: 36).[6] Kopinak (1995) adds: 'In 1991 the buying power of the minimum wage was a third of what it had been in 1982, and that of other wages had been reduced by half. The minimum wage set by the federal government in Mexico buys only about a quarter of the basic necessities that are essential for a typical worker's family, and therefore the average household has to have at least four minimum wages just to survive' (Kopinak, 1995: 36). Empirical evidence suggests that in deed, maquila worker's households are often large (nuclear or extended households) with several young income earners (Young, 1986a; Carrillo and Santibañez, 2001).

Figure 3.17 shows wage comparisons across industry sectors (non-maquila and maquila) and in relation to the minimum wage. As we can see, maquila salaries have indeed augmented during the ten-year period, but (presumably) this has been mostly due to an increase in the salaries of staff and technicians. In fact, the wages of workers on the assembly line have been kept at one USD/hr since 2003, arguably to keep pace with the Chinese competition (Figure 3.17). The increasing salary differential between maquila and non-maquila industry shows above all the decline of local industry compared with maquila operations (Figure 3.17) (see Zarsky and

[6] A study by Mejías (2002) positively correlates the nominal and real exchange rates with the 'maquila' growth, these being the most significant internal macroeconomic variables for the development of the industry. Salaries paid in pesos become more competitive after devaluation.

Gallagher, 2004). To understand and anticipate changes in maquila salaries (principally those of assembly workers), one has to attend to changes in the minimum wage (set by the government) and the wage differential between Mexico, the USA and other maquila countries.

Figure 3.17 Wage comparisons between different industry sectors and the minimum wage, 1995-2005



Source: Calculated from INEGI (2007) and Sotelo (2004)
Note: The minimum salary was an average of the regional minimum salaries in the country (that is, including regions A, B and C). Data coincides with ILO 2007.

To some, the generalised decline in Mexican salaries cannot be attributed to the development of the maquila industry but rather to deeper economic and social problems (Stoddard, 1987; Sklair, 1988; Barajas, 1989). The minimal purchasing power of the Mexican working class seems to be due to recurrent devaluations and high inflation rates, making 'maquila wages even more meagre' (Sklair, 1993). These authors do not believe the EMI is responsible for peso devaluations, but rather that maquila operations evolved as a result of more complex economic problems (inflation, external debt, government mismanagement of the budget, uncompetitive local industry... etc.) that forced the government to devalue the peso, thus, making assembly operations more attractive to investors.

Bearing in mind the *maquilisation* of the country, the loss of (uncompetitive) local industry, the elimination of unions, privatisations, unemployment and growing migration, such an analysis is inadequate. The development of the maquila industry cannot be understood as simply the result of a governmental incapacity to create jobs, regardless of the international economic environment in which the maquiladoras developed. In the context of neoliberalism, there is little doubt that the application of the NEM has created a favourable environment for maquila operations and, to a certain extent, devaluations and eventually a decline in real wages. The so-

called 'integration' into the world economy has not been without consequences and has revolved almost exclusively around the maquila industry (Fleck and Sorrentino, 1994; Ochoa and Wilson, 2001; Cypher, 2001; Salas, 2001; Kelly, 2001; Zarsky and Gallagher, 2004; Parrado, 2005; Morris and Passé-Smith, 2007).

It is possible that a 'bad' inheritance from local industry influenced the maquila sector, but the sector has clearly benefited local elites and TNCs more than the Mexican workers, and has not done much to change that situation. Moreover, the *maquilisation* of Mexico has been consistently justified in terms of the capacity of the maquila to enhance the living standards of the Mexican working class and not to maintain or worsen their already difficult living conditions.

In addition, there appear to be differences in spending patterns between maquila and non-maquila households that exacerbate the dependency on a regular salary, making the maquila workers more vulnerable to unemployment (Fernández-Kelly, 1983; Sklair, 1993). Maquila households are said to have more expenses and, thus, in some cases have a lower standard of living (particularly when workers are single mothers) than other low-income households. Maquila households live beyond their means, in part because a regular income allows spending, but on the other hand, transport costs represent a significant share of their expenses that diminishes their spending capacities (Fernández-Kelly, 1983; Kopinak, 1995; Carrillo and Santibañez, 2001).

It is believed that unemployment is a greater problem in maquila households, their precarious existence aggravated further when social survival strategies (such as the support networks of relatives, neighbours or even shop-keepers) have been undermined. This is apparently a common pattern among maquila workers, who have to spend most of their time at work, thus lacking the opportunity for social interaction (Fernández-Kelly, 1983; Sklair, 1993: 222; Kopinak, 1995; Wilson, 2002). Scarce employment opportunities other than in the maquila (particularly for women in northern cities) often compound the situation.

In order to show the precarious living standard among maquila workers, Fernández-Kelly (1983) and Cravey (1997) outlined the importance of the social security services for these workers. According to these studies, some older women take a job in the maquila mainly to get free medical services for themselves and their families (Fernández-Kelly, 1983; Barajas, 1989; Fatemi, 1990; Cravey, 1997).

What is more, maquila operations often undermine the interests of US workers. González and Barajas (1989) documented the debate on the negative impact that the relocation of assembly operations might have on the US economy, in particular the danger that too many US workers might be left unemployed (Hilker, 1989; Treiber, 1989; Amozurrutia, 1989; Mungaray, 1989). The loss of jobs in the transport and electrical/electronics sectors in the USA due to re-location of assembly operations in Mexico proved to be an important issue during NAFTA negotiations.

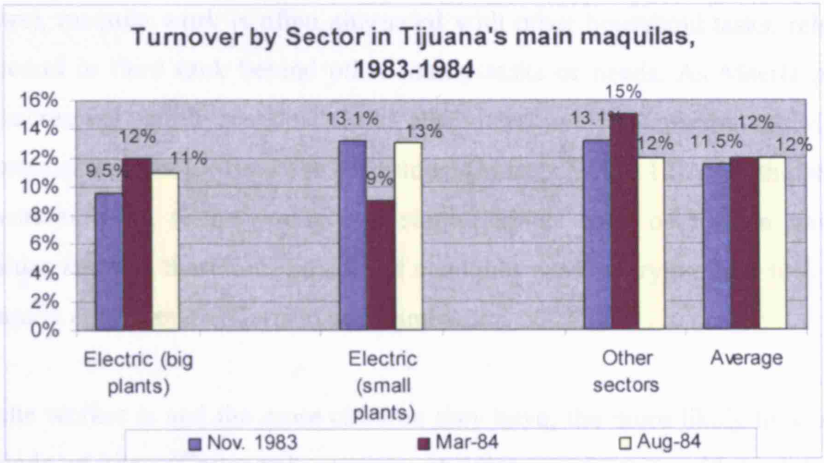
3.4 Other Considerations

Turnover

The history of the maquila industry has been characterised by high turnover rates. Almost all authors refer to this as one of the main problems faced by the administrative staff of the plants, particularly in those cities where the demand for labour far exceeds the supply (Juárez and Tijuana are regularly cited in the literature) (Fernández-Kelly, 1983; González and Barajas, 1989a; Chrispin, 1990; Sklair, 1993; Kopinak, 1995; Wilson, 1996; Feenstra, 1997; Carrillo and Santibañez, 2001; Maertz, 2003). It is difficult to get turnover figures because maquila managers are often reluctant to provide information, but it is believed that the turnover of assembly line workers can reach as high as 35 per cent per month in the worst cases (Chrispin, 1990: 75; Maertz, 2003: 115).

Carrillo (2001) found that turnover rates in the garment and electronics sectors of Ciudad Juárez — probably the most representative of the EMI — were, on average, around 100 per cent per annum. Other authors put it at 10 to 15 percent per month (Fatemi, 1990; Wilson, 1996; Carrillo and Santibañez, 2001; Wilson, 2002; Maertz, 2003) (see Figure 3.18). The majority of assembly line workers seem to stay for short periods of time and are replaced by workers who also stay for short periods of time, thus increasing turnover rates. The whole labour force is not necessarily replaced every year. In fact, it is known that older than the average workers remain for longer in the same plant (Carrillo and Santibañez, 2001).

Figure 3.18: Monthly Turnover Rates by Maquila Sector 1983–1984



Source: González (1989)
Note: an average of around 10 per cent monthly turnover results in around 100 per cent turnover per annum, which is the turnover rate found by Carrillo (2001).

There are three main reasons generally put forward to explain high turnover rates. First, the limited purchasing power of maquila earnings seems to encourage people to switch to another job (often in another maquiladora) if even minimal advantages are perceived (Fernández-Kelly, 1983; Kopinak, 1995; Wilson, 1996; Cravey, 1997; Carrillo and Santibañez, 2001; Wilson, 2002). Second, the distance between the workers' home and the workplace determine the costs of transportation and the time lost in commuting. Women workers often have to make two return journeys, making it even more complicated for those who have children to look after (Fernández-Kelly, 1983; Fatemi, 1990; Chant, 1991; Kopinak, 1995; Cravey, 1997; Carrillo and Santibañez, 2001; Wilson, 2002).

Some maquiladoras have assigned great importance to this issue, to such an extent that in some cases they have joined local governments in investing in road paving or public transport subsidies (Young, 1986b; Chrispin, 1990 76; see also De la O, 2000; Zamorano, 2006). Thirdly, the 'mind numbing' nature of the work seems to be behind the high rates of absenteeism and turnover (Fernández-Kelly, 1983; Barajas, 1989; Kopinak, 1995; Wilson, 2002). In general, it is suggested that the lack of motivation experienced by the majority of workers, given the limited opportunities for making a career within the industry, encourages them to look for a different job (Warner, 1990). According to Fernández-Kelly (1983), Young (1986) and Carrillo (2001), maquila employment represents a temporary solution for members of usually large, low income families.

On the one hand, since the participation of women in the maquila is very high (particularly in some sectors), maquila work is often alternated with other household tasks, relegating factory work to second or third rank behind other family tasks or needs. As Maertz puts it: 'Events related to increasing family responsibilities and alternative job information will be the most common external triggers for turnover behaviour' (Maertz, 2003: 122). On the other hand, most maquila workers seem to be young and single. Single men or women have less family responsibilities and are, therefore, capable of changing work or trying their luck when they got tired of maquila employment (Carrillo and Santibañez, 2001).

The older the worker is and the more children they have, the more likely they are to work for longer periods of time. Conversely, young, childless workers would tend to leave sooner (Carrillo and Santibañez, 2001: 104). Needless to say, most workers in the EMI are young and usually childless.

Although 'third' generation maquiladoras offered the prospect of reduced turnover rates (due to the more complex nature of the assembly activities and the technology and training that such work offered), turnover in capital-intensive maquiladoras remains high (Wilson, 1996; Zarsky and Gallagher, 2004). However, although not explicitly demonstrated, it is likely that turnover rates have fallen somewhat, given the comparatively better salaries, training and working conditions in technological maquiladoras (Wilson, 1996; Ramírez, 2001; Rivera and Maldonado, 2004). In contrast, clothing maquiladoras still for the most part hire young female workers, who are engaged in labour intensive activities that require very little training and earn comparatively less money (Fleck, 2001; Colmenares, 2006). Turnover in clothing maquiladoras remains high.

To date, turnover has been a significant parameter through which to measure workers' satisfaction with working conditions and salaries. Although turnover rates might have improved over time and might vary between maquila sectors, few comparative studies have been made on the subject. In general, turnover rates in the EMI have always been and remain high and. thus, could well reflect: 1) the poor salaries earned by workers; 2) the few prospects of building a career that are offered by maquiladoras; and 3) the generalised dissatisfaction among workers.

The Influence on Urban Development

Although, maquiladoras have generally been located in purpose-built industrial parks, 'maquila shanty towns' gradually developed (Staudt, 1986; Young, 1986a; De la O, 2000). In an effort to facilitate transportation to the workers, maquiladoras were increasingly communicated by (new) roads and public transport routes, which facilitated urban development around and eventually closer to maquila industrial parks (De la O, 2000: 193). In some cases the *colonias populares* were affected by maquila activities, either through pollution or water consumption that limited the availability of that resource in low-income areas (De la O, 2000; Liverman, Varady, Chávez, and Sánchez, 2002). Generally speaking, the development of infrastructure in northern maquila cities has not kept pace with the needs of the population (Staudt, 1986; Young, 1986a; Spalding, 1999; De la O, 2000; Liverman, Varady, Chávez, and Sánchez, 2002).

However, maquila managers and local government officials seem to have increasingly worked together in a co-operative scheme to guarantee transport services for the workers and, at times, improve the infrastructural conditions in low income neighbourhoods (González and Barajas, 1989a; Fatemi, 1990; Sklair, 1993; Cravey, 1997).

Nevertheless, negative externalities such as the exposure to industrial waste, noise and the deterioration of the landscape are still associated with the maquila (González and Barajas, 1989a; Fatemi, 1990; Wilson, 1996; Spalding, 1999; Cooney, 2001; Liverman, Varady, Chávez, and Sánchez, 2002). More generally, the maquila seems to aggravate some of the problems already caused by intense migration flows to northern cities, though it cannot be blamed for all them (Stoddard, 1987; Spalding, 1999; Liverman, Varady, Chávez, and Sánchez, 2002).

Environmental Pollution

Although, the environmental performance of TNCs is now a significant factor in discussions about sustainability, the environmental impact of the EMI was not properly studied until the mid-1990s. Few authors offer a substantial analysis of the environmental problems that the maquiladoras have brought to the northern border area, but many have noted the growing presence of polluting maquila plants as the sector has developed (Sánchez, 1989; González and Barajas, 1989a; Sklair, 1993; Wilson, 1996; Mumme and Duncan, 1998; Spalding, 1999; Cooney, 2001; Montalvo, 2004).

Sánchez (1989) devised the 'pollution haven' hypothesis,[7] concluding that the relocation of certain maquiladoras does respond to the lax environmental standards in Mexico. He links the generation of hazardous waste in the northern border region to the electronics, metal, auto-parts, plastic, chemical products, wood, leather, printing and glass industries, in which the maquiladoras participate vigorously. He emphasised that although there are three main ways of getting rid of industrial waste — underground deposits, recycling or export to the USA, the most common practice is that of underground deposits, indicative of low environmental standards (Sánchez, 1989: 164-166).

Some authors believe that, far from bringing better working and environmental practices, NAFTA has promoted irresponsible corporate behaviour (Gillbreath, 1992; Molina, 1993; Bowen, Kontuly, and Hepner, 1995; Grossman, 2000; Kopinak and Barajas, 2002). Cooney (2001) notes that only 751 maquiladoras keep safe disposal records, while over 3,000 do not give any account of their methods for disposal of hazardous waste to the Mexican government (Cooney, 2001: 74). He adds that only 11 per cent of the toxic waste generated by the maquila industry is properly treated. Moreover, illegal dumping seems to be rising since the year 2000, due to the legal reforms that mean that maquila plants are no longer required to return their waste to the USA (Reed, 1997 in Cooney, 2001: 74). However, Contreras (2006) sustains that the northern border maquiladoras usually behave in a more responsible manner than the local industry, a position supported by several other authors (Perry et al., 1990; Molina, 1993; Bowen, Kontuly, and Hepner, 1995; Logsdon and Husted, 2000; Mercado and Fernández, 2002; Montalvo, 2004).

Other studies indicate that the behaviour of foreign industries with respect to the environment is not markedly worse than that of local industry, and that a willingness to comply with local environmental regulations can be more closely linked to other variables such as plant size and industry sector (Albornoz, 2000; Mercado and Fernández, 2002). The most polluting plants in Mexico are those working in the petrochemical and chemical industries, printing and editing, the paper industry, fertilisers, synthetic fibres and resins, but most of these are locally owned and are not necessarily export-oriented activities (Mercado and Fernández, 2002: 212). The most polluted states (Veracruz, Estado de México, D.F., Nuevo León, Tabasco) are not those that host more maquiladoras, but those with petrochemical and chemical industries, although the northern states hosting maquila operations showed 'high' levels of concentration of polluting industries (Mercado and Fernández, 2002).

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[7] That is the relocation of dirty industries in LDCs with low environmental standards.

Size of Plant as a Factor Determining Working Conditions and the Stability of the Local Economy

Large, prestigious maquiladoras have always been preferred by both workers and the government. The benefits arising from economies of scale are numerous and affect workers, public officials and facilitators. The policies aimed at attracting larger maquiladoras are driven by the stronger commitment that a major investment implies. The most direct implication is that these plants come to stay 'for good', giving more stability to the workforce, the government and the facilitators (Fernández-Kelly, 1983; Stoddard, 1987; González and Barajas, 1989a; Fatemi, 1990; Sklair, 1993; Wilson, 1996; Ramírez, 2001).

The expenses associated with the installation of big plants imply more revenue for the facilitators who sell larger plots, build industrial parks or roads, or supply electricity, water and other facilities. Local governments and the local workforce also have a greater participation in the preparations to install large maquiladoras, and later to keep maquila operations running (González and Barajas, 1989a; Fatemi, 1990; Sklair, 1993). The initial capital invested by large companies to relocate its assembly operations can move considerable local resources — including workers and white-collar professionals, which is not necessarily the case with small maquila plants. Of course, large, high-tech maquiladoras working under JIT processes of delivery (principally the automobile and electrical/electronics sectors) entail larger investments than clothing, toys or furniture maquiladoras.

Long-term investments mean higher expenditures, longer training programmes, the need for a stable permanent staff and the necessity to establish good relations on a long term basis with the workers, service suppliers and the government. In addition, large maquiladoras operate under a well-defined managerial policy, promoting better working conditions and production processes similar to those carried by their parent companies (and perhaps higher environmental standards). Other externalities such as transport subsidies and the provision of public amenities (canteens, sports facilities, toilets, air conditioning) are specific to large maquila plants (González and Barajas, 1989a; Fatemi, 1990). Prestige among maquila workers is often promoted through these mechanisms, making it more attractive to work with renowned, prestigious brands (Fernández-Kelly, 1983).

The size of the plant reflects a major investment and therefore a set of benefits associated with the existence of a corporate policy and experience that only major TNCs can bring.

Conclusions

As we have seen, the critiques of the EMI have been varied, and while arguments to condemn or justify maquila operations have evolved, many of the central arguments remain. The works of Fernández-Kelly (1983), Stoddard (1987), Barajas (1989), Fatemi (1990) and Sklair (1993) synthesised quite well the main debates around the maquila of their time, and have set the parameters of the debate until this day. More recent authors have re-visited and/or developed the main arguments initially laid out by those authors, and have closely followed the evolution of the EMI (Wilson, 1990; De la O, 1994; Kopinak, 1995; Wilson, 1996; Fleck, 2001; Cooney, 2001; Carrillo and Santibañez, 2001; Wilson, 2002; Mejías, 2002; Maertz, 2003; Weiler and Zerlentes, 2003; Islas, 2004; Rivera and Maldonado, 2004; Canto and Cruz, 2004; Montalvo, 2004; Castilla, 2004b).

Over time, the empirical evidence has shown that, despite the growth and evolution of maquila operations, many problems persist. In fact, most of the recurrent negative aspects attributed to the EMI over time could be seen as characteristic of the industry. Although the EMI has evolved in some respects, in many others it has remained the same for almost 40 years.

For instance, maquila jobs have been insufficient to provide employment for a growing economically active population. The fact remains that only around four per cent of the working population in the Mexico works in the maquila industry. What is more, maquiladoras have mostly employed young workers, who were not the traditional labour force left unemployed after the end of the '*bracero* programme' or as a result of structural adjustment policies. The employment of migrants to northern states in the maquiladoras has only been marginal.

Although the maquila became part of a central development policy, it has mainly employed young workers needing to help their families. The pattern of employing under-paid, young, primarily urban men and women is repeated in all maquila sectors. The fact that for a long time the majority of those employed in maquiladoras were young, dependent women, and now also young men, shows how their penetration relied on the availability of inexperienced, docile workers, willing to work for low wages. Although significantly more men are now employed particularly in the capital-intensive operations, the fact remains that clothing and electrical/electronics maquiladoras are more common and, thus, more characteristic of the EMI than high-tech, capital-intensive maquila plants. Low wage, non-unionised, unskilled work remains the norm.

For those who believed that the EMI was an imminent solution to Mexico's problems, that would foster local industrial development, upgrade workers' skills and ultimately integrate the country's economy into world markets, the results are disappointing. With linkages with local industry remaining marginal, a lack of technology transfers and the incapacity of the EMI to promote investment in research and development (in the local industry), the maquila can scarcely be considered a development policy in its own right. Maquila activities remain an enclave economy.

The retention of foreign currency coming from maquila operations is minimal, principally because Mexico has to pay a considerable debt, but also because the government has not demanded enough taxes from the maquiladoras, in an effort to assure more FDI. In addition, consumption patterns along the northern border, and throughout the country since NAFTA was signed, result in considerable dollar outflows that seriously limit foreign currency retention. Savings and local investment remain extremely low. What is more, state and local governments have often had to invest considerable amounts of money to assure maquila entrepreneurs that a minimal infrastructure will be in place. Although the balance is most likely to be a positive one, it is not yet clear how beneficial the EMI has been considering the government investments.

Moreover, the maquiladoras have not improved income polarisation in Mexico. Far from it, they run on low salaries, while the TNCs increase their competitiveness. Given the danger of relocation, the government has been obliged to keep maquila wages competitive through devaluations. TNCs and the so-called 'facilitators' are clearly more advantaged by maquila operations than the workers themselves. Income disparities between rich and poor have widened in Mexico, particularly in the last decade, and the EMI clearly reflects those disparities. In fact, the constant lowering of real minimum wages seems to indicate that the real function of the minimum wage is to serve as a 'wage ceiling'. Some authors interpret the constant decline in workers' purchasing power as being the result of the application of the NEM, in general, and thus of maquila development.

Although, there has clearly been an upgrading of personnel in all maquila sectors, most maquila employees are on the assembly line, with few working in management, technical and supervisory positions. The fact that maquiladoras are run by Mexicans and that more managerial positions were opened up, does not mean that the EMI has brought an overall increase in Mexico's labour standards. Although only four per cent of the working population works in the maquila, the EMI was expected to integrate with local industry and, in so doing, raise all

working conditions and salaries. In sum, even if the maquiladoras cannot be held to blame for undermining working conditions, they have hardly improved them. More importantly, due the (globally) competitive nature of assembly operations, salaries are expected to remain low, limiting most workers' living standards.

Perhaps one of the most significant indices that demonstrates worker dissatisfaction and the limited opportunities to develop a career in the sector is the historically high turnover rates of the EMI, in all sectors. During the first phases of maquila development, female workers in the clothing and electrical/electronics maquila plants were known to change jobs if minimal advantages were perceived. The same applies to male and female workers in Juárez today, for whom maquila jobs seem to be a palliative or temporary solution to assure a minimal household income.

Turnover remains particularly high in the clothing and electrical/electronics maquila sectors, revealing a generalised discontent amongst workers. Nevertheless, the availability of workers, and the possibility of replacement with little investment, give maquila employers a wide margin to keep their operations running despite high turnovers. However, more high technology maquiladoras (mainly automobile plants) promise more stability for assembly line workers, given that more training is needed and, thus, relatively better salaries are offered. Now employment and salaries differs more between maquila sectors than ever before. Although, in general, there are now more men integrated into the EMI, they appear to be concentrated in the capital-intensive maquiladoras. Women tend to work in labour-intensive plants, and thus earn lower salaries.

Chaotic urban growth and underdevelopment in northern cities have coincided with maquila growth, as has pollution all along the northern border. However, evidence from different phases of maquila development suggests that the EMI cannot be held accountable for all of this, although it has clearly played a part. According to some authors, migration flows have put considerable pressure on the urbanisation processes of northern cities, but migration is not necessarily the result of a 'pull factor' provoked by the EMI. Migration to the USA intensified in recent decades and appears to result from generalised unemployment and economic stagnation. Maquiladoras may be only blamed for giving more stability to those low-income families — already residing in northern states — which include individuals who could potentially seek to migrate to the USA.

Similarly, the environmental performance of the maquila has been open to criticism. On the one hand, it is clear that the EMI is not among the most polluting industries in the country (that dubious honour is held by oil), although some authors point to the lack of control and accountability in the sector. In general, it would appear that the large maquila plants tend to comply with the Mexican environmental norms. Those which do not are said to have only polluted as much as the local industry in any case (since the inception of the EMI). On the other hand, the concentration of maquiladoras along the northern border, and particularly the electrical/electronics plants — thought to be among the most polluting — raises concerns with regard to the capacity and the very existence of a waste management policy to control pollution. It is clear that the environmental situation in the northern border area has deteriorated, certainly due to the presence of the maquiladoras.

Large maquiladoras perform better than small ones. Large plants give more security to local governments simply because they make bigger investments and require more people to operate them. Larger size implies economies of scale that often benefit the workers, either because the working conditions are better (machinery, training, health and safety) or because they offer services or advantages, which small maquiladoras cannot provide (transportation, playing fields, canteens and others). More importantly, large plants often work for firms that are well positioned in the world market, thus assuring stability of maquila operations over the long term and parent-company policies that assure minimal environmental and labour standards.

Therefore, although the EMI has evolved and developed, it has definitely not delivered on the promises that maquila promoters made since the inception of the BIP. Although some improvement has been made, the EMI cannot be regarded as a development policy for the reasons discussed in this Chapter. Maquila development is hardly a sustainable development policy: 1) it is an enclave economy; 2) it has not significantly improved workers incomes; 3) it is largely dependent on US finance and inputs; 4) it serves the markets of developed countries and the interests of TNCs; and 5) it is hardly environmentally friendly.

However, one must keep in mind that not all maquiladoras are the same, and that their impact varies, depending on: a) the plants themselves; b) the industry sector, but most importantly, c) the socio-economic (and historical) context of the region in which they are located.

Most of the literature provides evidence for northern border maquiladoras, which are located in cities with huge demographic and environmental pressure — partially due to the maquila

activities themselves. Although northern border maquiladoras could be taken to represent the EMI in general, and illustrate the national economic and historical context in which the EMI developed, it is by the selection of cases that we can draw a more refined picture of the impact that one particular maquiladora can have. The following chapter will provide details on the case study I intend to develop.

Chapter Four

METHODOLOGY

Introduction

The data on which this thesis is based were derived from documentary sources, a series of interviews with Mexican government officials concerned with policy-making in the area of sustainable development, and a case study of maquila development in the state of Yucatán, southern Mexico. The case study consisted of interviews with the management of the Monty plant in Motul, questionnaire surveys with Monty workers and with a control group and analysis of the general developmental impact of the Monty plant.

The data were collected during a period of over twelve months in Mexico, covering the period from October 2002 to September 2003. Four months were spent in Mexico City and eight in the cities of Mérida and Motul in the State of Yucatán.

4.1 General Approach

On the one hand, the case study approach was chosen because it aims to explain 'What is going on in an area' through the analysis of empirical data taken from primary sources (Samik-Ibrahim, 2000). Case studies in the social sciences, and more particularly within geography, have been preferred (for some time now) over theoretical approaches simply because they make full use of empirical evidence (quantitative or qualitative) and set out to offer an explanation for a contemporary problem. In Yin's words: 'The case study is an empirical enquiry that: investigates a contemporary phenomenon within its real life context; when — the boundaries between phenomenon and context are not clearly evident; and in which — multiple sources of evidence are used' (Yin, 1989).

The selection of the case study, forms data collection and analyses were made according to the principles of Grounded Theory Methodology (GTM) (Barney and Strauss, 1967; Pandit, 1996; Samik-Ibrahim, 2000). Some of the phases of GTM will be explained in the following sub-sections (see Table 4.1 for a review of the different phases of GTM).

Table 4.1: Grounded Theory Methodology, Step by Step

PHASE	ACTIVITY	RATIONALE
	Research Design	
Step 1 **Review of Technical Literature**	• Definition of research question • Definition of a priori constructs	• Focuses efforts • Constrains irrelevant variation and sharpens external validity
Step 2 **Selecting Cases**	• Theoretical, not random, sampling	• Focuses efforts on theoretically useful cases (e.g., those that test and/or extend theory)
	Data Collection Phase	
Step 3 **Develop rigorous data collection protocol**	• Create case study data base • Employ multiple data collection methods • Qualitative and quantitative data • Overlap data collection and analysis	• Increases reliability Increases construct validity • Strengthens grounding of theory by triangulation of evidence. Enhances internal validity • Synergistic view of evidence • Speeds analysis and reveals helpful adjustments to data collection
Step 4 **Entering the field**	• Flexible and opportunistic data collection methods	• Allows investigators to take advantage of emergent themes and unique case features
	Data Ordering Phase	
Step 5 **Data ordering**	• Arranging events chronologically	• Facilitates easy data analysis. Allows examination of process
	Data Analysis Phase	
Step 6 **Analysing data relating to the first case**	• Use open coding • Use axial coding • Use selective coding	• Develop concepts, categories and properties • Develop connections between a category and its sub-categories • Integrate categories to build theoretical framework • All forms of coding enhance internal validity

Continue next page

Step 7 **Theoretical sampling**	• Literal and theoretical replication across cases (go to step 2 until theoretical saturation)	• Confirms, extends, and sharpens theoretical framework
Step 8 **Reaching closure**	• Theoretical saturation when possible	• Ends process when marginal improvement becomes small
	Literature comparison Phase	
Step 9 **Compare emergent theory with extant literature**	• Comparisons with conflicting networks • Comparisons with similar frameworks	• Improves construct definitions, and therefore internal validity • Also improves external validity by establishing the domain to which the study's findings can be generalised

Source: Pandit (1996)

On the other hand, interview analysis was chosen to analyse the 'sustainable development approach in policy-making' since it offers many advantages. Through interviews the researcher can not only gather information he/se might not be able to collect by other means, but can also learn about the individuals' personal motivations, histories and experiences and, thus, investigate complex behaviours and motivations (Hay, 2000). Interviews also allow the researcher to gather diverse opinions and experiences, and often enable him/her to fill a gap in knowledge that other methods cannot (Hay, 2000).

In-depth interviews are about a dialogue between persons, and ultimately a form of communication that other forms of inquiry lack (for instance, questionnaire surveys or pure observation) (Flowerdew and Martin, 2005). The interviewee is encouraged to speak freely, which allows him/her to provide more complete, longer and specific answers sometimes making reference to their own life experience or personal impressions (Flowerdew and Martin, 2005; Graham and Skinner, 1993). There is also the possibility to rectify, clarify or explain questions and answers.

Interview sessions are a complex exercise that involves both individuals' experiences, interests and knowledge, enabling (ideally) a richer exchange of ideas and information compared with other forms of inquiry. More importantly, the researcher can guide the interview and decide how and to what extent to exploit the sources of information available. Interview analysis has

been widely accepted as a reliable, versatile and adequate method, particularly in the social and political areas of inquiry (Barney and Strauss, 1967; Flowerdew and Martin, 2005; Graham and Skinner, 1993; Hay, 2000; Pandit, 1996; Samik-Ibrahim, 2000; Yin, 1989).

4.2 Choice of State

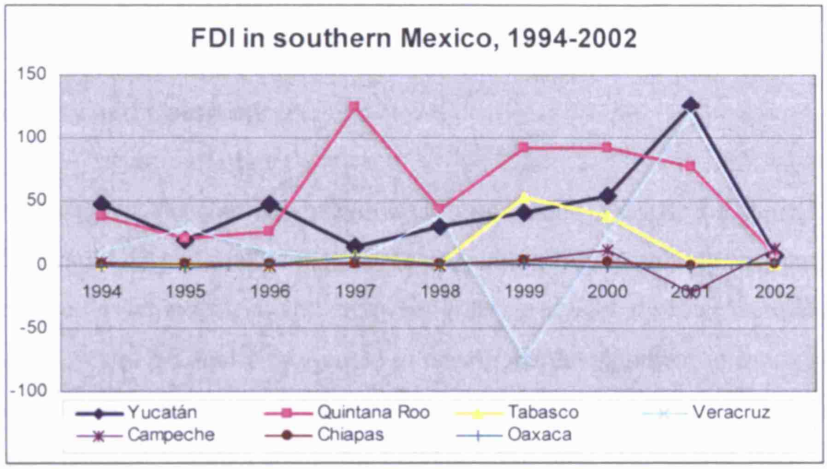
The south of Mexico is made up of seven states: *Veracruz, Oaxaca, Tabasco, Chiapas, Campeche, Yucatán* and *Quintana Roo.* Few of these states were suitable for study, since they have neither attracted much FDI nor hosted many maquiladoras (Figure 4.1).

Figure 4.1: Southern Mexican States

Source: own elaboration

Chiapas and Oaxaca are among the poorest states in the country and have virtually no industry at all. Campeche's industry is concentrated in the petrochemical sector and it has very few maquiladoras. Foreign investment in Quintana Roo has gone mainly into tourism, particularly the famous vacation resorts of Cancún, Tulum and Playa del Carmen. Tabasco and Veracruz contain a few maquiladoras, but most foreign investment has gone into the petrochemical, chemical and rubber industries (see Figure 4.2) (for more detail see García de Fuentes and Morales, 2000).

Figure 4.2: FDI in Selected Southern Mexican States (Percentage Changes)



Source: INEGI (2004)

Since Yucatán is the only state in the south of Mexico with a large number of maquila plants, it was the obvious state to study. The number of maquiladoras in the state has grown steadily since 1991 and the maquila industry is now one of the main income generators in the state. In 2000, it was the second largest income source behind tourism (Albornoz, 2000; Canto, 2001; Castilla, 2002; Labrecque, 2005; Vela, 2002; García de Fuentes and Morales, 2000).

Over the past decade, Yucatán has been one of the fastest growing 'maquilador' states in the country. It hosts diverse sorts of maquiladoras owned by local and foreign investors. In 1998, foreign-owned maquiladoras accounted for 50 per cent of the invested capital in the industrial sector and created 74 per cent of the jobs associated with that sector (Albornoz, 2000; Canto, 2001). Most maquiladoras in the state produce for export, mainly to the US market.

As in most southern states in Mexico, Yucatán society is highly polarised (CONAPO, 2006; Castilla, 2002; Castilla, 2004; Labrecque, 2005). Income, cultural and lifestyle differences among the Yucatecans reflect the incomplete transition from a rural to a modern society and show the kind of social disparities common to so many developing countries. The state contains one of the highest percentages of people speaking an indigenous language in the country — closely followed by Oaxaca (INEGI, 2007); a key factor given the racial discrimination that is so pervasive in Mexican society (Labrecque, 2005; Reed, 2001; Gabbert, 2004).

Mayas provided the main source of labour on the henequen haciendas but they are increasingly moving to the cities and adopting more urban lifestyles. Yet, many Mayan communities still

endeavour to maintain their language and traditional culture (Hervik, 1999). This opposition between old and new is a vital element in understanding what is happening in Yucatán.

4.3 Choice of City and Company

Most of the industry in Yucatán is concentrated in or around Mérida, the capital and principal city, in which around 43 per cent of the state's population live. Although the maquila policy in the state started out as an industrial and urban programme and most plants were installed around Mérida,[1] the policy was gradually reoriented to encourage development in more rural locations. The objective was to create more jobs in rural communities, so as to slow the movement of people to bigger cities in Yucatán and in the neighbouring state of Quintana Roo.[2]

The policy was also a reaction to the final demise of the henequen industry in the mid-1980s. The government tried to attract maquila plants to the so-called 'ex-henequen region' since it was both (relatively) densely populated and economically depressed. A series of incentives were offered to international investors, and these were successful in attracting maquiladoras to the area. Investment in the clothing industry responded positively to the incentives and plants proliferated in the former henequen area after 1995.

In selecting a case study for this research I was particularly concerned to choose plants that had created significant numbers of jobs and significant pollution. Although the clothing industry is not particularly renowned for its polluting activities, some clothing maquiladoras were of particular interest, insofar as they were very large, used methods that consumed a great deal of water and were potentially polluting the watercourses.

A process used to discolour jeans (known as 'sand-blasting') appeared to pollute considerable amounts of water, which was later deposited underground, 'at a certain depth'. The geological and hydrological structure of the Yucatán peninsular appeared to magnify the danger. Yucatán's bedrock is formed of '(young) limestone, honeycombed with caves and sinkholes'. Intercommunicating (underground) streams of clean and polluted water (often sea water) make it risky to consume water from any source. These geological characteristics seem to have

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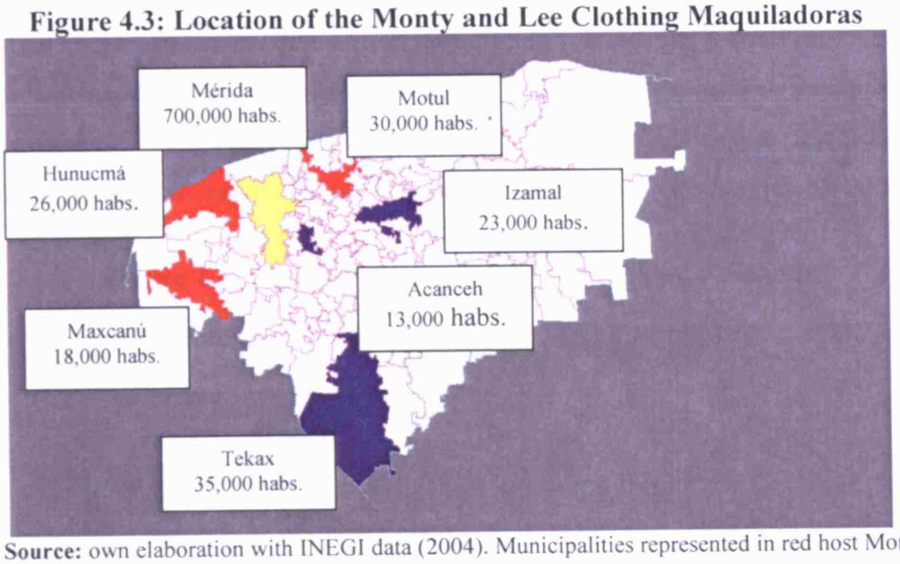
[1] Initially (1970s) development policy in the state considered varied industrial processes and built an industrial park for 'polluting' industries and later a second industrial park for 'non-polluting' industries, both located in Mérida.

[2] Mérida and Cancun, principally, and more recently the USA. In 2000, around 390,000 Yucatecans migrated to the USA, representing 0.4 per cent of the population (INEGI, 2004).

prevented the government from building a (costly) sewage system in Yucatán, for which reason most organic waste is deposited in latrines. Porosity also allows recollection of rain water.

Two companies, Lee Corporation and Monty Industries, dominate the clothing export scene in Yucatán. Both had several plants in different rural locations: Izamal, Maxcanú, Motul, Acanceh, Hunucmá and Tekax (Albornoz, 2000) (see Figure 4.4).[3]

Figure 4.3: Location of the Monty and Lee Clothing Maquiladoras



Source: own elaboration with INEGI data (2004). Municipalities represented in red host Monty plants, those in blue Lee Corp. plants

The two companies ran two of the largest plants in the state: Lee Corporation in Acanceh and Monty Industries in Motul. Together the two plants employed 4,122 people in 1998, representing around 40 per cent of the total clothing maquila workers in the state (Albornoz, 2000).

The original intention was to compare the operations of Monty Industries in Motul with those of the Lee Corporation in Acanceh. However, when I contacted the managers at both firms, those at Lee refused to co-operate. Fortunately, Monty managers did allow me to undertake a social survey of their workers in their biggest plant in Motul. They also agreed to give me any relevant information, providing that it did not compromise their business activities.

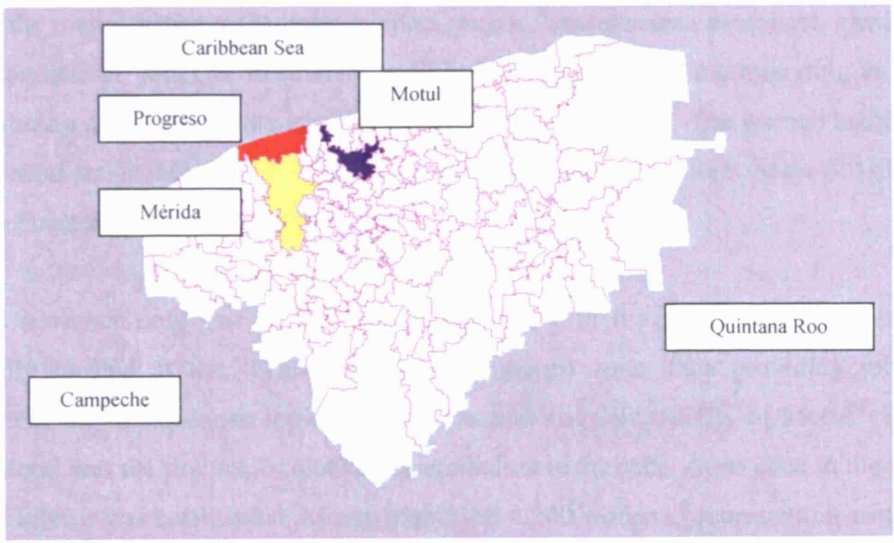
Motul is an important city in Yucatán. It now ranks 15th in terms of population, but it was the centre of the henequen industry for almost a century. Its location favoured the commercial distribution of the fibre, since it was close to the old port of Progreso, from where the

[3] Accounting for nine per cent of the total population in the state with an average of 24,000 inhabitants in each (INEGI, 2004).

merchandise was exported to the USA (and, to a lesser extent, Europe). But Motul is also very close to Mérida, the capital city, where the legal and financial administration of the henequen industry took place (see Figure 4.4).

At the beginning of the twentieth century Motul was the second most important city in Yucatán. It was not only the centre of henequen distribution, but also a financial centre that was home to some of the richest families in the state, and later the country (Dzul, 2006). Given that Motul was surrounded by henequen *haciendas* (and agricultural and cattle ranching), it became the most important marketplace for henequen and a very important market for agricultural and cattle ranching products. Motul had a vibrant economy and was among the first cities in Mexico to offer modern forms of entertainment (it had two cinemas and a casino) (Dzul, 2006).

Figure 4.4: Puerto Progreso, Mérida and Motul, Yucatán



Source: own elaboration

Long before the henequen industry was finally liquidated in the mid-1980s, Motul's main function had changed. It became a dormitory suburb of the capital, while continuing its role as a retail and administrative centre for the surrounding district. The municipality of Motul[4] reflects perfectly the social and economic problems of the state that resulted from the decline of the henequen industry. Unemployment, a surplus of unskilled labour, low levels of education, a sexist division of labour, out-migration and lack of infrastructure are among the principal difficulties. More generally, governmental agricultural policies seem to be very limited and ineffective, the quality of the land is poor, and hurricanes and tropical storms are commonplace.

[4] It comprises the city of Motul and around 20 'comisarías'. The *comisarías* are administrative units divided along the lines of the former haciendas, within the municipality of Motul. See appendix p. 394.

At the social level, some authors have highlighted gender issues as being significant, particularly among the rural Mayans, emphasising the patriarchal and traditional character of the society and the challenges posed by the state's efforts to 'modernise' the region (Castilla, 2002; Castilla, 2004; Labrecque, 2005; Vela, 2002). The rates of alcoholism among men have risen and have become a major health issue for the authorities,[5] while child mortality remains above the national average. More recently, AIDS has become a matter of public concern (CONAPO, 2007).

The people of Motul are traditionally linked to henequen cultivation, but since the henequen crisis they have moved on to more urban jobs, and therefore have a mixed rural/urban culture. Even though there are only one or two generations between maquila workers and henequen producers (and workers), many Motuleños have migrated and worked in more urban-related jobs since the henequen crisis became acute in the 1970s. The majority of men looked for jobs linked to the tourist industry (as hotel-keepers, *mozos*,[6] maintenance personnel, chauffeurs and in other 'peripheral' jobs) or as builders, mainly in Cancún, with some migrating to California (USA), where a solid community appears to have been established.[7] The women mainly became domestic workers in Mérida or sold works of embroidery as artisan crafts (Castilla, 2002; García de Fuentes and Morales, 2000).

Monty is now not only one of the largest employers in the maquila industry but is also strategically located at the 'heart' of the ex-henequen zone, thus providing jobs for the [illegible] of the ex-henequen region as a whole, and not only the city of Motul.[8] The Monty plant in Motul was the first major clothing maquiladora in the state. At its peak in the year 2000, five years after it was established, Monty employed 4,200 workers,[9] representing around 38 per cent of total employment in Motul.

The owners of Monty Industries are from Hong Kong, and the company produces denim trousers principally for the US market. All of its production is exported to top quality American brands such as Polo, Tommy Hilfiger, Gap and Eddie Bauer, among others. Monty relocated to

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[5] The new PAN government prohibited the sale of alcohol after 10 o'clock at night; a policy described in the Yucatecan press as conservative and ineffective.

[6] *Mozos* are usually young men working in hotels as waiters, carrying luggage and doing whatever is required by the administrative staff. It is usually the lowest paid employment in the tourist industry.

[7] All this information came from informants, civil servants and academics interviewed during the fieldwork.

[8] It is been referred as one of the models of local maquila success. Many clothing maquildoras have closed in the face of recurring economic crises.

[9] With an additional 1,200 workers in its Maxcanú plant.

Yucatán from Honduras, where all its activities ceased 12 years ago, because of alleged inefficiencies in production and delivery. The Mayan labour force proved to be very skilful and the location and transport facilities of Yucatán are very convenient to continue with maquila production (particularly under JIT delivery processes). The plant in Motul is the biggest one that the company owns at present.[10] Monty is a very competitive company worldwide, that successfully relocated twice (once within Honduras) to reduce production costs and to implement JIT production processes. Monty steadily expanded (in Yucatán and recently China) to supply its clients' needs, surviving the Mexican maquila crisis of 2001.[11]

4.3.1 Contacting the Monty Management

The negotiations started three months before I left for Mexico, and were conducted by e-mail with the general manager, Juan Mena. However, once I reached Mexico, I experienced problems getting an interview at Monty, since the company was dealing with many problems after Hurricane Isidore hit the region. The managers said that they had an extra workload to deal with attending to structural problems in all of their plants, and that they had to wait for the situation with their workers to stabilise before they could continue with their normal activities. All Monty plants were damaged, and most of the workers found themselves in a very precarious situation, many houses had been destroyed, water and food supplies were scarce, and in the form of government aid.

The impact of the hurricane was widespread and long lasting, with Mérida and the former henequen zones being particularly badly hit. The damage was apparent even two months after the hurricane. Once the situation improved and Monty managers agreed to see me, I had to negotiate to get their permission for the planned social survey. Monty wanted to know more about my work, and managers were cautious about giving out information or authorising any interviews or questionnaires without prior knowledge.

During my first meeting, I insisted that the content of interviews and surveys would remain confidential and would be used for academic purposes only. I made it clear that my work was supported by state government officials and local academics, and that my interest in studying Monty was to anticipate the developmental capacities of the EMI as a whole and more

[10] Interviewwith the manager at Monty, Lic. Juan Mena, at the Monty premises, March 2002.
[11] *Op. cit.*

particularly in Yucatán. Permission was finally granted but with conditions imposed, including a revision of the questionnaires.

I had two meetings in the plant before setting the date to apply the questionnaires. The first was with the human resources manager, Jorge González and the second with the manager of the plant, Juan Mena. I presented my work as an attempt to support the development of maquila policies in the context of globalisation and justified my interest in studying Monty Industries on the basis of the size of the plant and its importance as a labour supplier for the city of Motul, the region,[12] and ultimately the state of Yucatán. I stressed that their more 'open' policy (made evident by their willingness to share data and allow questionnaire surveys) was particularly helpful and set them apart from their closest competitors, Lee Corporation. The next step was to carefully define the kind of information that I was seeking to gather and the size of the sample that I was going to survey.

As I knew that I would have to be cautious to get the most from them, I only asked for basic human resource figures, a formal interview with the plant manager, and their approval for a questionnaire survey of 320 people (ten per cent of the workforce of around 3,200 assembly line workers). The information solicited had to be authorised by the manager and a second meeting was scheduled for that purpose.

In the second meeting I was given general figures on the composition of the workforce and the origin of the workers, and we agreed the conditions for the application of the questionnaires. The manager insisted that the sample be limited to 100 people (an additional ten workers would be allowed to fill in the questionnaires in the knowledge that some questionnaires might need to be discarded), to be contacted over a two-day period. Floor managers would pick the workers and the company would provide the necessary rooms. The workers would fill in the questionnaires unaided, since Monty only employed literate employees.

All meetings were cordial and the attitude of the managers was co-operative, as long as I complied with their conditions. A week after the second meeting I had two sessions with Monty workers to fill in the questionnaires, and three weeks later, a final interview with the Monty manager in Motul.

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[12] The Monty plant hires workers from the city of Motul and its 20 *comisarías*, and from around 24 surrounding municipalities.

I cannot say I was fully satisfied with the information and the facilities that Monty gave me. For instance, I would have liked to be able to apply questionnaires to a larger, more representative sample, interview more than one human resources manager and be allowed to interview workers, take pictures and experience life within the Monty premises; all of which was emphatically denied. Access to the plant was highly controlled and I was not granted freedom of movement within the premises, or allowed to talk to whomever I wanted. I was not permitted to carry out environmental analyses of water samples or to approach Monty workers. However, under the circumstances and bearing in mind that no legislation obliges them to co-operate, I believe that I accomplished the initial fieldwork goals that I set myself.

4.4 Investigating the Environmental, Social and Economic Impact of Monty

The focus of this study was the economic, social and environmental impact of Monty's operations in Motul. The data that I collected were intended to give a complete picture of the company's operations in Motul and the conditions with which they have to comply in order to operate in the state. This information came from the Semarnat, Comisión Nacional del Agua (CNA), Profepa, state government officials, local government officials, Monty workers, Motuleños in general and Monty managers. INEGI and CONAPO statistics were also used. I will present the data and an analysis of the economic, social and environmental impact of Monty in Motul in the following four chapters.

4.4.1 Social and Economic Surveys

The social survey collected information on living and working conditions in Motul and the surrounding area. It initially included around 110 Monty workers[13] and, as a control group, 100 inhabitants from greater Motul. Information was gathered through questionnaires and aimed to compare the personal characteristics and household composition and structure of Monty workers with those of maquila workers in other parts of the country (taken from the literature). Information was also collected to compare the working and living conditions of Monty workers with non-Monty workers from similar locations. More specifically, I asked about the workers' personal characteristics and the living conditions and job opportunities found in Motul (and the region) to ascertain the extent to which the maquila policy has improved living standards.

[13] The inclusion of questionnaires with an additional ten workers at Monty did actually serve to complete the sample, given that some questionnaires had to be discarded.

My objective was to find out more about the Motuleño labour market, that is, the jobs performed by different household members and the different types of jobs that they have performed in recent times; and also about the Motuleño's household dynamics. I concentrated on the gender, age and other key characteristics of the household members, particularly of those responsible for the household income. Three questionnaires were drawn up, two for Monty workers and one for other workers. Both samples contained very similar sets of questions to facilitate comparisons. All questionnaires were semi-open, except the first one applied at Monty's plant in Motul, which was filled in by the workers themselves (see appendix p. 359-372 for a copy of the questionnaires).

The first set of questionnaires applied in the factory was heavily amended to meet the managers' conditions. Many questions were ruled out, particularly those relating to turnover, working conditions, accidents in the factory, training, the possibilities for promotion and expectations of getting a better job. The questionnaire had to be corrected three times and the number of questions was reduced from 70 to around 40.

Given these circumstances I decided to apply a second questionnaire in the workers' homes in order to complete the survey.

4.4.1.1 Monty Workers

a) Monty Workers at the Plant

A total of 110 Monty workers filled in a questionnaire at the plant. The first sample (4.5 per cent of the plant's manual workforce) was drawn from different sections of the plant: 49 came from 'tailoring', 27 from 'after care', 18 from 'washing' and seven from 'cutting' (nine questionnaires were taken out because too many questions were not answered or answers appeared to be inconsistent). It is my guess that some of the workers had problems with reading and writing, for which reason some questionnaires were ruled out. The areas from which the workers in the sample were selected constitute the core activities and all of the manual workers are employed in one of those areas, that is 80 per cent of all employees.

The nature of the sample was determined by the decision at Monty that the questionnaires had to be filled in over a two-day period in manageable groups of 15 to 30 people. They wanted to ensure that the production process was disturbed as little as possible and insisted on limiting the

interview time to 30 to 40 minutes per group. Supervisors from each section picked the workers to be interviewed.

The Monty staff claimed that the people selected were those who could be spared without upsetting the production process. This may well have biased the selection in a variety of ways, but I have no basis upon which to establish the nature of that bias. It is possible that they chose the most productive or most loyal workers to give as positive a view of the company as possible. Unfortunately, this was the only way that I could gain access to workers inside the plant. Workers came from 23 ex-henequen municipalities and 13 *comisarías* of Motul (more detail is given in the appendix, p. 373-374 and in Figure 4.5). Some 54 per cent were men and 46 per cent women.

The questionnaire survey sessions at the plant were run in the first week of March 2003. They seemed to go well. I made a short presentation to each group of workers before handing out the questionnaires. I presented myself as a student studying abroad, who wished to document the lives of maquila workers in Yucatán. In general, the workers reacted positively, since they were encouraged by their managers to take the questionnaire seriously. They also found the experience to be a welcome break from the daily routine.

I presented my work as potentially useful to point the government towards more sensitive development policies, and stressed that the information gathered would be shared with Monty executives and the state government. That seemed to be a convincing argument since most of them were still waiting for government aid after the hurricane. Many asked me if my work was related to an appraisal of the impact of the damage caused by 'Isidore' and whether it would help them get more aid or speed up the distribution process. I informed them that my work had nothing to do with the government's aid policy.

I must stress that the presence of a former assistant, Nuri Martínez, a graduate student of Anthropology of the Universidad Autónoma de Yucatán (UADY) was very helpful. During completion of the questionnaires some guidance was needed. Since I was only given the opportunity to apply one questionnaire, I was not able to adapt or change any questions that were consistently misunderstood or that were not clear. Nuri and I attempted to clarify those questions and the proposed options to answer them.

In general, the survey was successful in the sense that the majority of workers answered all the questions and it gave me the opportunity to make a first positive approach to Monty workers and Motul residents. Some questions regarding the worker's household dynamics and household living standards were not welcomed or were seen as intrusive — particularly by men— but most respondents had no problem in answering all of the questions.

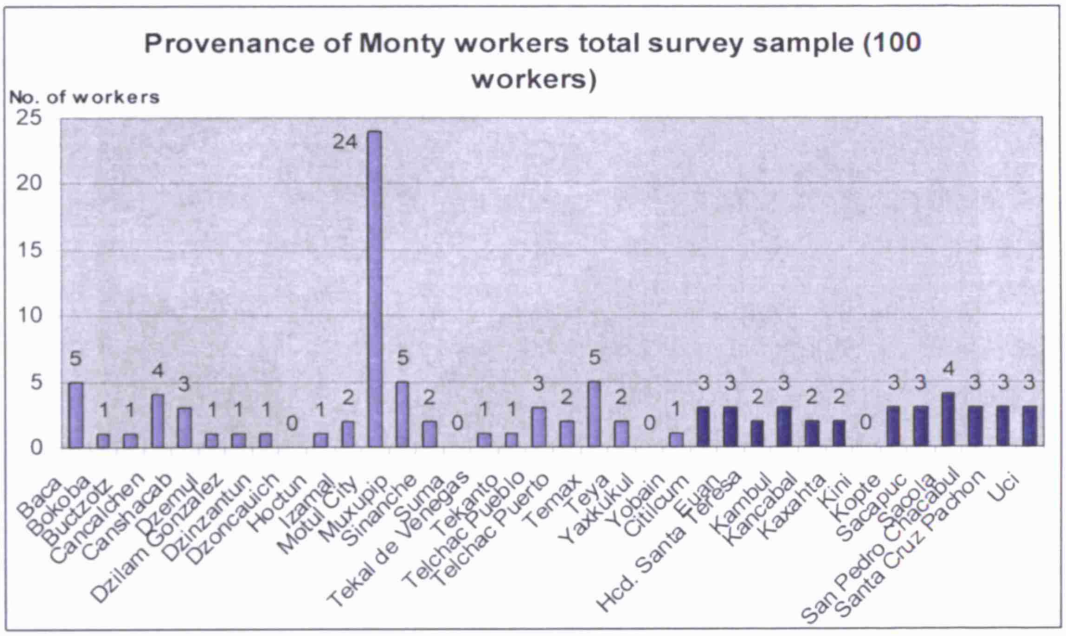
b) Monty Workers at Home

Because of the large number of amendments made to the questionnaire by the Monty management I decided to conduct a second (complementary) survey, to be carried out in the workers' homes. The second questionnaire included questions that had been prohibited by the Monty management and a set of additional questions. Some 61 of those interviews were follow-up meetings with workers sampled in the factory, most of whom lived in the *comisarías* of Motul or in the most accessible municipalities (see appendix p. 373-374 and 385 for more detail). As it was difficult and time consuming to locate all of the workers from the first sample, the rest of the second sample consisted of 39 workers selected in a different way.

The remaining 39 workers (who filled a complete and identical version of the questionnaires carried out in the plant and at home), were selected from the municipalities and *comisarías* represented in the initial survey, maintaining (as far as possible) the same proportions found in the first sample as regards the gender and origin of the workers. They were interviewed in public squares and picked mainly for their willingness to co-operate.

The final composition of the second sample did match the spatial and gender representation of the initial survey held at Monty, and was decided by practical considerations. The general criterion of trying to match the number of people and the origin and sex of the workers of the first sample was satisfactorily accomplished, although considerably more time was needed. Almost all of the municipalities of the final sample of Monty workers are represented, with the exception of three municipalities and one *comisaría* (see Figure 4.5). Similarly, the percentages of men and women found in the first sample are identical to those in the final sample (46 per cent women, 54 per cent men).

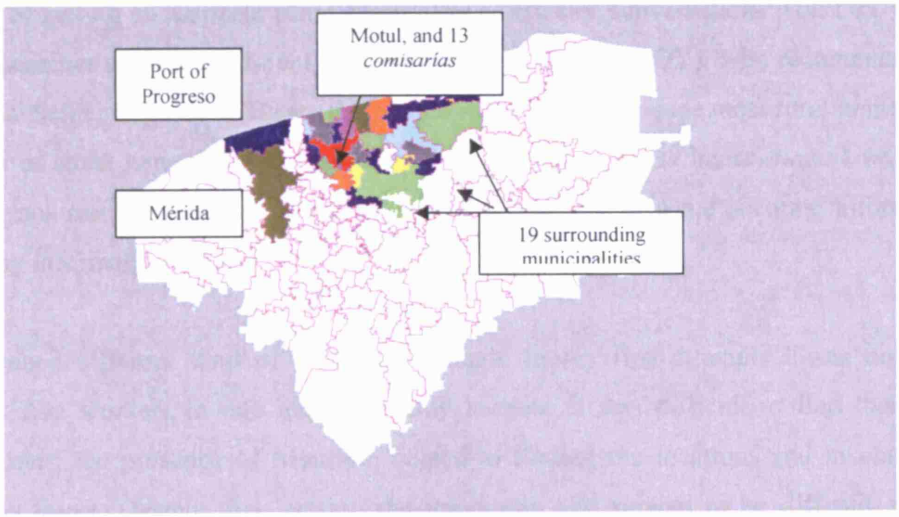
Figure 4.5: Total Survey Sample of Monty Workers by Place of Residence



Note: Three municipalities (Dzoncauich, Suma and Yaxkukul) and one *comisaría* (Kini) that appeared in the first sample were not represented in the final Monty sample. The darker bars on the right-hand side are *comisarías* from Motul.

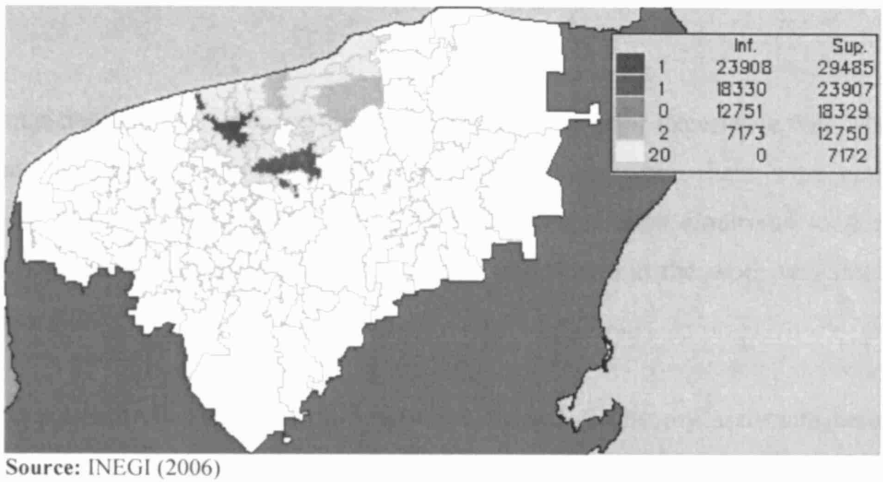
Figure 4.6 shows the place of residence of the 100 Monty workers in the final sample and Figure 4.7 shows the total populations of the municipalities represented in the sample.

Figure 4.6: Place of Residence of the Monty Workers Represented in the Final Sample



Source: own elaboration with INEGI software

Figure 4.7 Total Population (by Ranges) of the Municipalities in which the Sampled Monty Workers Live



Source: INEGI (2006)
Note: The three municipalities not represented in the sample are not shown. The most populous locations are Motul and Izamal.

Visits were made at weekends since that was the best time to find the workers at home. The process proved to be both difficult and slow. The average number of workers interviewed was around four per weekend, and the distance between the *comisarías* proved to be a major obstacle, since transport is slow and there are few buses. I personally interviewed 15 people and supervised a further 35 interviews conducted by a former Motuleño assistant named Mauricio Dzul.[14]

The idea of getting an assistant came about after a series of conversations with Dra. Castilla (a senior researcher at the department of social sciences at the UADY), who recommended that I had a local helper not only to locate the people to be surveyed, since most rural homes have no addresses or street names, but to inspire greater confidence in the interviewee. I was told that rural Mayans can be very shy in their homes and may not give me accurate information, or indeed any information at all.

I experienced different kind of problems, though. In my first attempts I was only able to interview five workers in one month, mainly because it was difficult to find them in their homes. Later, the presence of Mauricio helped in finding the locations and in obtaining the interviews faster. Despite this, getting the interviews still proved to be difficult since most workers were 'resting' or 'visiting relatives' during the weekend. Once an initial round of 35

[14] He has been for some years a research assistant to Dra. Beatriz Castilla, who wrote a doctoral thesis at the Perpignan University on gender issues associated with the maquila in Mérida. He also worked on INEGI surveys in Motul.

interviews had been completed, I realised I would not be able to finish the social survey in time. Mauricio offered to carry on with the interviews with the help of two additional assistants from Motul.

Since the questionnaires were quite straightforward, and my prior experience with Mauricio had shown that local people responded better to questionnaires when these were conducted by locals, I decided to enlist the help of Carolina Uc and Carlos Contreras to complete the remaining 65 interviews.[15] Nevertheless, progress was slow and the work was not completed until January 2004.

I had the opportunity to supervise the interviews carried out by my assistants before leaving Mérida and later on during two visits in July 2003 and January 2004. The three assistants understood well the aims of my survey and adapted some of the questions according to the local words and language usage. I am quite satisfied with the final result of the interviews/questionnaires, since, thanks to my assistants, I believe I was able to get honest and complete responses in a shorter period of time. This solution proved to be effective, and was based on the experiences of other local researchers, notably that of Dra. Beatriz Castilla.

4.4.1.2 Inhabitants of Motul

A third questionnaire survey was used as a control sample and was applied to 100 non-Monty workers of greater Motul (that is Motul and its *comisarías*). As stated earlier, the sample was used in an attempt to compare the living and working conditions of Monty workers with those of non-Monty workers. The sample was selected from the neighbourhoods and *comisarías* of Motul that had been covered in the initial survey. Surrounding municipalities were not included due to the difficulties experienced in finding co-operative non-Monty workers in more distant locations. Furthermore, we discovered on several occasions that co-operative non-Monty workers were directly related to Monty workers or (recent) ex-Monty workers (that is, husbands, wives, brothers and sisters or parents), for which reason they could not be included as it would bias the control sample.[16]

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[15] Both were anthropology students at the UADY, and were interested in carrying out the survey since they had worked before with Mauricio on the INEGI surveys, and found that the experience gave them the opportunity to do fieldwork related to their academic interests.

[16] Despite this consideration the control sample had at least 33 Monty workers, a figure which might have been higher if the *comisarías* were surveyed.

The second round of visits to the municipalities and persuading people to be interviewed proved, once again, to be difficult and time consuming. For this reason, I decided to limit the control sample to greater Motul, mainly to keep the fieldwork (as much as possible) within time and budget constraints.

People were initially selected from the electoral registers of the IFE (*Instituto Federal Electoral*). [17] I attempted to match the Monty sample with a random sample of non-Monty workers from greater Motul, following the same pattern of gender and age representation. The inhabitants of 'better off' neighbourhoods and distant *comisarías* were eliminated from the list, since they would not match with the initial sample of workers living in greater Motul.[18] This affected central neighbourhoods of Motul mainly (and as mentioned earlier distant *comisarías*).

I then picked men and women within an age range of 18 to 35 and listed the names according to their registration number to avoid alphabetical bias. The initial list was reduced from 8,000 to around 4,000 people after this system of filtration. This list contained a balanced proportion of men and women. I finally picked one name out of every 40 to obtain the 100-person sample.

The process of finding the people on this list and getting an interview with them was complicated. Replacement interviews were organised when the selected individual was not found or did not co-operate. The replacements chosen were normally the next door neighbours of the people selected in the original list.

The process that I went through then echoed my experiences with the Monty workers. I started alone and found it difficult to locate people or get the interviews. I carried out 15 interviews in two months and needed the help of Mauricio, Carlos and Carolina to finish. In the end, the sample did not adhere to the initial statistical criteria, since most of the interviewees were replacements for those included in the initial sample. Nevertheless, I endeavoured to stay as close to the original subject in terms of location, gender and age as the circumstances allowed. The replacements found were next door neighbours or people living across the street and, in extreme cases, people willing to answer the questionnaires in the central plaza of the selected *comisarías* (see Figure 4.8).

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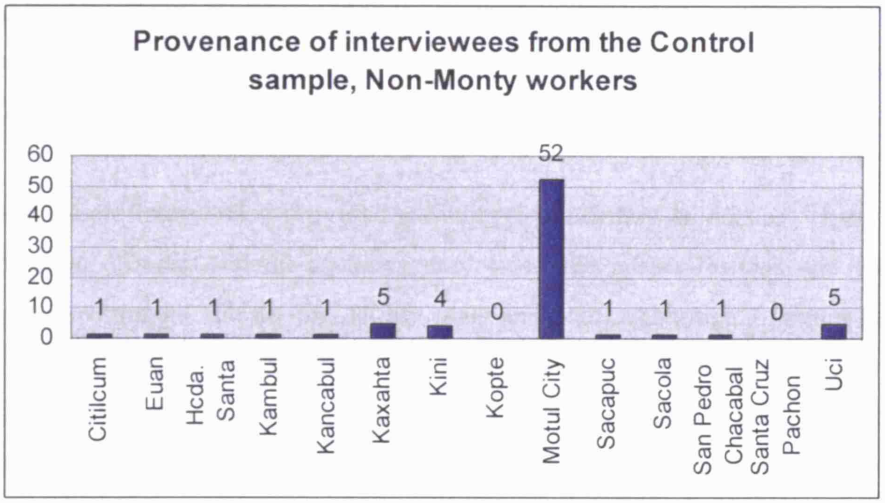
[17] Which I had thanks to a friend, Adrián Vilchis, working in the department of communications of the Partido Revolucionario Institucional (PRI) of Yucatán.

[18] This was done with the help of Mauricio Dzul, who had knowledge about the kind of people living in each neighbourhood.

The difficulties that we encountered in this case were of a different nature. People were not interested in answering such questions for a piece of postgraduate research. The idea of being surveyed by people other than those from INEGI struck them as odd. Carlos and Carolina[19] developed a strategy of presenting the survey as part of an anthropological study for their degrees. Since local Motuleños recognised Carlos and Carolina, they were able to get the interviews faster, maintaining the quality of the earlier interviews.

However, despite our efforts to survey non-Monty workers, 26 of those interviewed had a household member working at Monty or who had recently left. I decided to include those 26 questionnaires in the Monty sample (which therefore totalled 126 surveys), leaving the non-Monty workers sample with 74 interviewees. Figure 4.8 shows the provenance of the non-Monty workers.

Figure 4.8: Non-Monty Workers' Place of Residence (Greater Motul)



Note: all columns are *comisarías* of Motul (and thus form part of 'greater' Motul)

The proportion of men to women in the control sample was the opposite of that in the Monty sample (that is 54 per cent women and 46 per cent men). More women answered this questionnaire because interviews were conducted during the week, and it was more common to find a woman in the house, since more men than women in Motul work outside the home. However, the proportion of men and women in the control sample is fairly well balanced too.

[19] Mauricio did not participate directly in this round of questionnaires, but he supervised the work of others.

4.4.2 The Environmental Analysis

Environmental information was assembled from various sources. The main sources of information were: Semarnat's Environmental Impact Evaluation of the Monty Project; CNA records on water consumption; the PROPFEPA report on the environmental performance of Monty; and official documentation from the local government's waste dump.

Interviews with the municipal president, who had developed the maquila project, also proved useful. However, the water sample analysis that was initially planned had to be abandoned because the necessary access to Monty's installations was not given. Other interviews were carried out with state and local government staff, including the director of the Industrial Waste Management offices of PROFEPA and the CNA; the director of the local government's Secretariat of Ecology; and local waste dump personnel. Some useful interviews with my Motuleño informant (Mauricio Dzul), local traders and shop owners completed the information, although those interviews were not recorded since they were part of an informal set of visits. A more detailed account of the interviews is given in the section on the government survey (4.5; see also Table 4.2).

Some of the people interviewed provided me with documentary evidence. Those documents came from three different federal agencies, each one with a specific task and function, and complete the government file on the Monty plant in Motul. Although I cannot be sure how complete the information given was, I did manage to acquire records on Monty's water consumption, its water permits and fines from the CNA. I also got copies of PROFEPA's monitoring records on Monty and found out that there had been several complaints from local Motuleños with regards to Monty's activities.

The files obtained demonstrate the federal government's strategy of division of competencies and obligations among the different agencies. That strategy is supposed to assure better quality in the surveys, through a de-concentration of competencies to avoid corruption. The documents are therefore important pieces of classified information to be exploited according to each one's quality and characteristics.

I am confident that these documents can provide a detailed picture of the environmental performance of the Monty plant in Motul and, more generally, will give an idea of how the government deals with the environmental issues related to the maquila industry. The files

contained confidential information, and access was only granted after several interviews and the presentation of letters from the Institute of Advanced Studies of Yucatán (of the Instituto Politécnico Nacional, IPN), facilitated by Dra. María Dolores Cervera, Director of the Institute of Human Ecology, who supported my research.

The series of visits to the municipal presidency helped me to see how the local government works and how they seek to integrate some aspects of sustainability into their everyday practice and policy. I participated in two important government meetings. The first was to discuss whether a foreign company should be allowed to manage the waste dump. After a presentation, the company presented its tender to ten local authority mayors. The second was held for a 'resource delivery' to the local *campesinos,* who received money under the rural policy 'Progresa', a recent version of an old mechanism initially implemented by the PRI to support small and medium-size producers via injections of money to buy fertilisers and seeds. Although this latter meeting had nothing to do with the environmental aspects of my work, it did provide information that was valuable to my analysis of the economic and social impact of Monty. An examination of the sustainability of the maquila in Motul has to consider agricultural practice and policy in the region.

Photographs were taken and detailed data collected documenting the quantity and quality of the waste dumped, since Monty is the largest waste generator in the whole ex-henequen region (Motul and surrounding municipalities).

4.4.3 Additional Sources of Information

A series of informal interviews and a personal inspection of Motul and surrounding municipalities carried out over a number of days provided alternative sources of information. Most restaurant and shop owners spoke openly about the economic revival of the city since Monty operations had begun. Their testimonies will be considered as additional information on the social and economic impact of the plant.

I also got a full report on the housing development activities of two private construction agencies. This included maps of the latest housing developments in Motul, home to Monty (assembly line) workers and a few 'staff'.

Information on local crop production was impossible to get, since those crops are produced only for family consumption and are not, therefore, entered in official statistics. A more complex study was needed to trace the impact of Monty salaries on the '*cultivo en solar*',[20] which is considered more generally in the questionnaires.

To fully understand maquila development in Yucatán, reference should be made to the recent development of infrastructure by the state government. Major works were carried out to communicate small maquila cities with the Port of Progreso. One of the largest investments in infrastructure in the history of the state was needed to rebuild the port. These works were necessary since the EMI depends on imported materials to carry out assembly activities under JIT production processes, and on a reliable communications route to export maquila outputs to the USA.

The last works to modernise the Port of Progreso (for the third time) were carried out in 1999. Major works were also carried out in 1937 and 1985, at a cost of around US$119 million.[21] This phase of development was characterised by concessions to private investors and limited government participation. The port is located less than 40 kilometres west of the city of Motul and 36 kilometres north of Mérida (see Figure 4.4). This has been the major route for maquila inputs and exports, among other uses. It has also been used for the purposes of tourism, giving cruisers access to the Yucatán peninsula, and to export oil and import other manufactures. More private investments to exploit the port are underway. Also, many roads have been built to communicate with the port, and a highway was constructed recently from Motul to Mérida as part of the public works to support maquila development.

4.5 Survey of Government Officials

Formal interviews were conducted with 11 federal government officials in Mexico City, 15 state officials in Mérida and a former municipal president in Motul. The aim of those interviews was gain insight into what (key) federal and state officials understood by the term 'sustainable development', and how they sought to define and implement their policy in that area.

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[20] A family plot (cultivated or for animal breeding) that complements the household economy.

[21] For more information see http://www.puertosyucatan.com/elpuerto/progreso.htm.

4.5.1 The Federal Government

At a federal level three main government offices were considered: SEMARNAT, SAGARPA and PROFEPA, and seven state delegations: the Secretaría de Desarrollo Rural y Pesca; Secretaría de Desarrollo Industrial y Comercial; Secretaría de Ecología; Comisión Nacional del Agua (CNA); Profepa Yucatán; Secretaría de Desarrollo Social; and Semarnat Yucatán. Only one formal interview was conducted locally, with the man who was the municipal president of Motul in 1992, when the installation of the first clothing maquila was negotiated (see Table 4.2).

Some offices at the federal level, notably the Secretaría de Economía, Sedesol and the Secretaría del Trabajo y Previsión Social, were excluded because they are not directly involved in 'sustainability' issues. The agencies selected are responsible for involving other agencies in 'sustainable development' practice. This is how the federal government initially defined its strategy to integrate 'sustainable development' into the political agenda.

Officials were therefore selected due to their responsibility for preserving the natural environment (Semarnat); monitoring industrial activity and enforcing environmental law (Profepa); and implementing or defining rural development policies (Sagarpa). The same criteria were applied at a state level (as detailed in Table 4.2).

Table 4.2 Interviews held at Three levels of Government, and with Monty Management

FEDERAL LEVEL	
Name	**Position**
Semarnat [22]***/*** **Secretariat of the Environment and Natural Resources**	
Dr. Guillermo Roman M.	*Director General de Manejo Integral de Contaminantes*
Biol. Ricardo Juarez	*Director General de Impacto y Riesgo Ambiental*
Biol. Martha Niño (in substitution of Ing. Gustavo Orpinel)	*Director General de Desarrollo Urbano*
Lic. Eduardo Vega	*Director General de Evaluación y Planeación*
Mtra. Liliana Gutiérrez (in substitution of Dr. Luis Bojórquez)	*Dirección de Política Ambiental e Integración Regional y Sectorial*

Continue next page

[22] In Spanish *Secretaría del Medio Ambiente y Recursos Naturales.*

	Profepa [23]**/**
	Federal Bureau for the Protection of the Environment
Dr. Luis Fernando Hernández Lezama	*Subprocurador de Auditoria Ambiental*
Lic. Diana Ponce	*Subprocuradora de Recursos Naturales*
M. en C. Edgar del Villar Alvelais	*Director General de Denuncias Ambientales, Quejas y Participacion Social*
Quim. Jose Luis Támez Garza	*Subprocurador de Verificación Industrial*
	Sagarpa [24]**/**
	Secretariat of Agriculture, Livestock Farming, Fishing and Food
Lic. Leonel Ramírez	*Director General de Administración de Riesgos y Proyectos de Inversión*
Ing. Roberto Cedeño	*Director General de Programas Regionales y Organización Rural*
Dr. Arturo Garza	*Director General de Fomento a la Agricultura*

STATE LEVEL

Name	**Office/Position**
	Secretaría de Desarrollo Rural y Pesca/
	Secretariat of Rural Development and Fishery
Janitzio Durán	*Director de Planeación*
Ing. David Loria	*Director de Infraestructura para el Desarrollo*
Marco Gutiérrez	*Director de Análisis y Evaluación de Proyectos*
	Secretaría de Desarrollo Industrial y Comercial/
	Secretariat of Industrial and Commercial Development
Jorge Torre	*Director de Promoción*
Augusto Pérez	*Director de Comercio Internacional*
	Secretaría de Ecologia/
	Secretariat of Ecology
Ing. Larry Yah G.	*Jefe del Departamento de Control Ambiental*
Antrop. Carlos Medina Ortiz	*Jefe del Departamento de Prevención Ambiental*
Mtra. Guadalupe E. Valladares	*Gestión Ambiental*
	Comisión Nacional del Agua (CNA)/
	National Commission on Water
Ing. Marcos Poot	*Programación/Planeación*

Continue next page

Profepa Yucatán/ **Federal Bureau for the Protection of the Environment-Yucatán**

[23] In Spanish *Procuraduría Federal para la Protección al Ambiente.*
[24] In Spanish *Secretaría de Agricultura, Pesca y Alimentación.*

Dr. Luis Balam	
Secretaría de Desarrollo Social/ Secretariat of Social Development	
Arq. Roberto Medina	*Director de Desarrollo Comunitario*
Semarnat Yucatan/ Secretariat of the Environment and Natural Resources-Yucatán	
Mtra. Tamayo	*Directora de Impacto ambiental*
Ing. Alfonso Domínguez	
Ing. Luis F.	*Impacto Ambiental*
Guillermo	*Impacto Ambiental*

LOCAL LEVEL	
Name	**Office/Position**
	Director of the local High Technical School
Prof. Luis Emir Castillo	*Ex-Presidente Municipal de Motul*
	Monty
Contador Juan Mena	*Director de Gestión*

Interviews were conducted from October 2002 to January 2003 and from May to June 2003.[25] Officials were selected according to rank and specific duty. Only 'directors' of offices were interviewed, but on two occasions replacements were provided for the interviews. All interviews were held in the interviewees' offices during working hours.

All the interviews were based on similar semi-structured questionnaires, although each was modified according to the nature of the office and officer in question. The first part of the interview dealt with the legal framework under which the agencies operate. This was necessary because many of the agencies were of recent creation or had been through a series of recent legal reforms.[26]

[25] The end of the year is usually very busy and a reshuffle of personnel was expected at the beginning of the new year, which would set new priorities.

These reforms were promoted by the federal government and reflect the efforts of the two last PRI administrations (1988–2000) to incorporate environmental matters on the agenda in order to comply with the internationally-proclaimed goals of 'sustainable development', and to reflect their position on rural development. They also had the aim to set the agenda for policy-making at a state and local levels, in accordance with NAFTA resolutions on the environment.

By starting the interview with this type of question on the central theoretical themes, the interviewer was able to deal with more 'general' questions at the beginning. The following set of questions were more concerned with 'day-to-day realities', and were intended to encourage the interviewee to speak about the problems and frustrations that they face in drawing up and implementing policies. They also dealt with the degree of co-operation and joint action among agencies, and departments within agencies, to design more integrated policies.

The second section sought to explore the contradictions between the goals of development and sustainability. It aimed to explore the specific challenges for each agency and, particularly, to identify and define any conflict of interests among the actors involved in implementing policy. The interviewees were invited to speak about their experiences, emphasising sources of conflict and specific cases, and about how they intended to integrate and harmonise the opposing interests of those involved when implementing policy.

The final set of questions was intended to get an idea of the perceived problems and opportunities facing the officials. They also encouraged them to discuss whether they were provided with sufficient resources to meet their intended goals. Their opinion was sought on overall government efforts to apply more 'sustainable' policies, particularly in relation to the resources assigned to each agency. Interviews ended with a brief review of their personal careers and backgrounds.

4.5.2 State Level

A more comprehensive approach was developed at a state level by including a wider selection of state government agencies and state delegations of federal agencies. According to the federal government's decentralisation policy, the precise policies of state governments are defined according to their capacity for implementation and regional experience.

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[26] For instance the *Ley General de Equilibrio Ecológico y Protección al Ambiente* (LGEEPA), which established the legal framework for all environmental offices, and has been constantly updated and

Emphasis was put on the state agencies responsible for rural, industrial and social development and those state delegations of federal agencies responsible for the monitoring of industry and the environment. The core state agencies selected were the planning departments responsible for rural, social and economic development, together with state delegations of federal environmental agencies (CNA, SEMARNAT and PROFEPA-Yucatán) (see Table 4.2).

Through this series of interviews I sought to examine the main issues affecting the development and regulation of the maquila sector, and to explore how the state government sought to promote economic growth, alleviate poverty and take care of the environment. An emphasis was put on rural development policy, housing, the creation of jobs and the strategy followed to integrate the state into the world economy without disrupting the environment or society. The interviews contained similar questions to those conducted at a federal level, but were adapted according to the agencies in question, and bearing in mind the local situation in the context of governmental deregulation and economic globalisation.

Only the former municipal president of Motul was formally interviewed, since the current president denied me an interview before directing me to the member of local government responsible for environmental issues, Mtra. Ma. Teresa G. He told me that he was too busy to concede me an interview, but did offer his support to provide me with the necessary information. The political transition from PRI to PAN was a delicate and controversial matter at the time, and the former municipal president of the PRI was more willing to help me and knew more about the project since its inception.

4.5.3 Problems Encountered during the Interviews with Officials

The number of interviews conducted was limited by work schedules and the willingness of officials to help me. In two cases I had to interview a 'replacement' officer and in others I was not granted the interview.[27]

A new administration took power at a federal level in 2000. Few members of the PAN had previous experience in government. As a result, many of the people I interviewed were inexperienced and new to their area of responsibility. It proved to be difficult to arrange

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revised until the present time.

interviews with many of the officials. Several phone calls were necessary, and in a few cases it was difficult to reach the officials on the phone.

To compensate for such problems I decided to send the questions by e-mail and emphasise my position as a PhD student overseas. This gave them increased confidence and some agreed to meet me to hear about my work before authorising the interview. Their willingness to speak to me (after the questions had been reviewed) was partly the result of a general policy on transparency and the building of an image of a more co-operative government, in contrast with the bureaucracy that had characterised the PRI of late.

On a few occasions I had to exploit this policy of transparency, by referring to the government transition and mentioning a recent legal reform aimed at promoting more transparency in the government management of information.[28] I also emphasised that I was in receipt of a Mexican scholarship, which yielded good results.

The state government survey was conducted in Mérida where I lived from February to September 2003, with one further visit in January 2004. State government interviews followed the same pattern as those in Mexico City, although the officials in question were more open and it was easier to arrange meetings. This was particularly due to the fact that the aforementioned Dra. Ma. Dolores Cervera kindly supported my project and gave me official letters to help me get the interviews and to get information from the government officers.

In general, I did not meet with any serious practical or ethical difficulties in carrying out the government interviews and the surveys with Monty and non-Monty workers. I was able to overcome certain barriers to reaching government officials at federal and state levels, and the various difficulties that I encountered in getting the surveys done within time and budget restrictions. Nevertheless, I did have to convince the interviewees that my work was of general interest and to promise them a copy of the final document that I would produce. At times I was required to make extended presentations on the objectives of my work.

Conclusions

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[27] The state housing official was too busy and could not meet me, as was the case with some Semarnat's officials.

[28] This new law obliges public officers to relinquish information for research or documentary purposes.

The data collected in the field provided me with enough material to carry out qualitative and quantitative analyses on the impact of Monty and the sustainable development 'approach' applied by Mexican government institutions. INEGI and CONAPO statistics complemented the empirical data to enable me to examine the socioeconomic impact of Monty in Motul. Together with the literature on the EMI and data derived from this literature, the primary sources of information described in this chapter constitute the core material for the subsequent four chapters on findings.

Chapter Five

THE HISTORY OF MOTUL AND THE ECONOMIC IMPACT OF THE MAQUILADORA PROGRAMME FOR THE EX-HENEQUEN REGION

Introduction

This chapter is about the ex-henequen region, Motul and the surrounding municipalities where Monty workers live. I will start by giving a brief review of the origins and history of Motuleño inhabitants and by selecting the historical aspects that are relevant today in characterising the ex-henequen region. The intention of such a (brief) historical review is to identify the most relevant social, political and economic peculiarities derived from the 'henequen period' and the prior agro- and cattle ranching 'hacienda system'. A sufficient knowledge of the history and culture of the Mayas of Motul is a necessary precondition to interpret and analyse data on the economic and demographic impact of the Maquiladora Programme for the Ex-henequen Region, and on Monty's labour force in general.

Particular emphasis will be placed on the context in which the Maquiladora Programme took shape in 1985 and on its subsequent development. The importance of the Monty plant within the current maquila network is also of special interest given the objectives of the thesis and the case study under analysis. Thus, highlighting relevant aspects of Monty's history and showing the evolution of their operations and changes to employment patterns are key aims of this chapter too.

Furthermore, it is necessary to document the process by which the ex-henequen region recently became a 'semi-rural' maquila network in order to understand the magnitude of the recent economic and demographic changes experienced in the region. INEGI data on the economy and demography of Motul (and surrounding municipalities) will illustrate the region's impressive recovery over a period of just ten years. I will analyse changes to the region's employment, income by sector and selected demographic variables (such as total population growth, emigration, immigration and fecundity rates). Census data from the INEGI and CONAPO for the periods 1989–1999 and 1990–2000 provided the core data for these analyses.

Last, but not least, I will demonstrate the continuing semi-rural character of Yucatán (despite the impressive development of the EMI) and, more particularly, of the ex-henequen region by

comparing selected aspects of Yucatán with those of northern border 'maquilador' states. Marginality indexes, the percentages of urban and rural population and other data from the CONAPO will be used to compare the population and settlement patterns of Yucatán with those of the states of Baja California, Chihuahua, Nuevo León and Jalisco.

5.1 The History of Motul

The history of Motul dates back to pre-Hispanic times and seems to result from a population re-settlement of Mayas coming from the south (Sotuta) in the twelfth century. The tribe was guided by its *cacique* Zac Mutul, member of the Pech dynasty, from whom the name Motul comes. Despite the poor quality of the land and unfavourable weather for cultivation, the facility for adaptation and the know-how of the Mayas of Motul permitted them to develop and grow in number (Dzul, 2006; Castilla, 2002b).

From the early days of the colony and for the next three centuries, Motul's main economic activity was agriculture and cattle ranching (Dzul, 2006; Castilla & Torres, 1999). Production of honey, cotton (to craft *mantas*), sugar and wax was also common and remains part of Yucatán's exports (notably honey).[1] Mayan Indians were enslaved and exploited under the *hacienda* system during the colonial period and long after the independence of Mexico was achieved.

Prior to the henequen boom, the Indian Mayas used (and cultivated on a small scale) the henequen to make the ropes for use in the building process of Mayan houses and to craft sandals, hammocks and other house-crafts. Henequen was also used as a sharp material to cut human flesh in flagellation rituals.[2] Henequen is therefore present in Mayan mythology and tales, and is represented as a beautiful and useful crop (see appendix p. 395). However, by the mid 1800s henequen ropes became an indispensable piece of McCormick's reaper machine — used to cut and collect harvested grain, which substantially increased demand for henequen ropes (Vela, 2002; Canto, 2001; Castilla, 2002a). As American demand for henequen ropes grew, the *hacendados* (mainly located in the north-west of the peninsula) rapidly abandoned agriculture and cattle ranching, and concentrated on the production and processing of henequen (to turn it into a manageable fibre) on an industrial scale (Gabbert, 2004; MacLeod & Wasserstrom, 1983; Patch, 1993; Reed, 2001; Restall, 1997; Moseley, 1980).

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1 Interview with Mr. Augusto Pérez the director of International Trade of the state (2003).
2 Interview with informant anthropologist Nuri Martínez (2003).

5.2 The Green 'Golden' Era

The henequen industry impacted significantly on Yucatán's wealth. Yucatán became one of the richest states of Mexico in just a few decades, having been one of its poorest states for a long time (Vela, 2002; Canto, 2001).[3] However, demand for henequen products remained cyclical and depended on the size of the US harvest. Cyclical demand, price fluctuations and competition between producers made the henequen-market extremely unstable throughout its history (see Tables 5.1, 5.2 and 5.3). As henequen became an important source of income, state and federal governmental intervention grew (Wells, 1985; Brannon & Baklanoff, 1987).

Table 5.1: Henequen Production

Year	Tons	Area cultivated (hectares)
1860	330	n.a.
1880	21169	n.a.
1900	93600	n.a.
1916	200000	n.a.
1960	140000	n.a.
1971	116000	n.a.
1972	113000	n.a.
1984	67000	250000
1991	n.a.	140000
1995	30000	96000

Source: Vela (2002)

By 1912, the state government had actually become the exporter of the fibre (Brannon & Gilbert, 1999; Brannon & Baklanoff, 1987; de Teresa, 1992). State and federal agents were in charge of securing prices for local producers — the government would keep the price differential — negotiating prices with US buyers, and setting appropriate production quotas. During World War I henequen prices stabilised, and the highest level of henequen production was recorded in 1916, reaching 200 thousand tonnes (Vela, 2002; Canto, 2001) (see Table 5.1).

[3] Unlike the central and northern states, the south did not have minerals to exploit, which were the main source of income for the Spaniards. Thus, Oaxaca, Veracruz, Chiapas, Campeche and Yucatán have remained among the 'poorest' and most indigenous states of the Mexican federation until today.

Table 5.2: Henequen Prices

Year	Cents/Pound
1912	4.0
1914	7.0
1918	6.0
1929	1.9
1943	4.0
1949	14.0
1956	2.04

Source: Vela (2002)

However, the state government's participation — as an exporter, negotiator, investor and tax collector — led to the first large-scale governmental debt in 1919 (Vela, 2002; Canto, 2001; García de Fuentes & Morales, 2000). A Decline in demand after the end of World War I, over-production and the purchase of boats to export the fibre all signified huge losses for the Mexican government. By that time, Mexico's share represented more than 95 per cent of the henequen world-market, a situation that gradually changed as US investors introduced the crop in Africa, Brazil and Indo-china (Table 5.3).

Table 5.3: Mexico's Share of the World Henequen Production

Year	%
1900	98
1922	75
1929	53
1938	23
1950	15
1970	14

Source: Vela (2002)

Moreover, when land reform was implemented, the henequen industry became more and more politicised and subject to negotiations with an increasing number of parties. Land invasions led to the creation of successive governmental and private committees to settle disputes with the *hacendado* oligopolies and the emergent small producers (Brannon & Gilbert, 1999; Villanueva, 1984). Production among small-holders and *ejidos* was encouraged by successive government administrations, while government-owned enterprises to manufacture the henequen (notably *Cordemex*) were set in place (Vázques Pasos, 1999; Brannon & Gilbert, 1999).

The US economic recession of the 1930s led to a massive decline in henequen prices. The extent of the crisis between 1926 and 1936 forced the 'Mexican bank for agricultural credits' to subsidise henequen producers (large and small) and workers, who had no other source of

income (Vela, 2002; Brannon & Baklanoff, 1987). Neither henequen prices nor Mexico's share of the world market ever recovered to the levels of 1916.

However, World War II brought a slight recovery that perhaps gave too many hopes to government officials. By the 1940s, the henequen industry was completely regulated by the state and federal governments, whilst small-holders and *ejido* production had become more relevant. In any case, Mexico's share of the worldwide production had fallen further to 15 per cent in 1950 (Table 5.3). Supplying such a small share of the world henequen market signified that the golden era of Mexican henequen was over, and that revenues for small producers and *ejidos* would never reach the expected targets (Vázques Pasos, 1999; Brannon & Gilbert, 1999).

From the 1950s onwards, the market prices of henequen fell constantly, in part due to production increases in Brazil and other African and Asian countries, but also because henequen ropes were replaced by synthetic fibres. By the 1970s it was clear that henequen could not sustain the Yucatán economy for long. A line of credit from the rural Mexican bank was opened to try to develop agriculture and cattle ranching in the henequen region, a measure that had very limited results (Vela, 2002).

With the financial support of the World Bank (1979), the Mexican government gave credits, subsidies and maintained minimum salaries for those involved in the henequen industry, while an economic transition process was designed (Vela, 2002; Canto, 2001; García de Fuentes et al., 2000).[4] Constant migration to the neighbouring state of Quintana Roo, in which the resort of Cancún was built in the 1970s, and the impoverishment of the henequen region as a whole led to increased pressure on the state and federal governments.[5] In 1984 the 'Programme for the Integral Development of Yucatán and the Re-ordering of the Ex-henequen Region' was launched (Special Report, 1984).

The Programme clearly defined a process of economic development in accordance with the World Bank's neoliberal guidelines. Such guidelines promoted the complete withdrawal of the federal and state governments from the economy, and the increased participation of private investors and private organisations. By 1985, Yucatán's development strategy relied on FDI

[4] The president of the World Bank, Mr. MacNamara, went on an official visit to Yucatán in 1979.
[5] Interview with Mr. Jorge Torre the director of Economic Promotion of the state (2003).

and, eventually, on the export maquiladora industry (EMI), particularly in the ex-henequen region, where tourism is marginal and farming and cattle ranching never flourished again.[6]

5.3 The Maquiladora Programme for the Ex-henequen Region

By the mid-1980s it was clear that Mexico intended to integrate to the world productive chain by favouring free trade and FDI and by promoting an export-led development strategy. Although by that time the EMI had developed considerably in the north of the country, Yucatán's experience of maquila was minimal and concentrated in Merida's only industrial park (Wilson, 1996; García de Fuentes and Morales, 2000; Canto, 2001; Canto and Cruz, 2004).

In an effort to design a development programme that suited Yucatán's economic interests and fit the NEM, the state government consulted private US consultancy firms.[7] The government's only concerns were that the maquila industry in the north of the country had brought environmental pollution and often undesirable urbanisation processes.[8] The state government of Yucatán intended to maintain a 'dispersed' settlement pattern[9] and to look after the environment in order to protect the tourist sector and safeguard Yucatán's natural assets. At the same time, the state government sought to respect and promote economic specialisation within the different 'historical' economic regions of the state (see García de Fuentes and Morales, 2000 for more detail).

Nine socio-economic regions were redefined by the state government, most of which concentrated on tourism, agriculture, cattle ranching and fishing. [10] The ex-henequen region was among the most deprived, and together with Mérida accounted for most of the labour force of the state. Thus, a university from the US midwest drew up an investment plan, recommending the promotion of (mainly) clothing maquiladoras in the state (and particularly in the ex-henequen region), given the fact that clothing maquiladoras are considered to be among the

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[6] Interviews with Mr. Jorge Torre, Augusto Pérez and Arq. Medina directors of state government offices (2003).

[7] Interviews with Mr. Jorge Torre and Augusto Pérez of the Secretariat of Industrial and Commercial Development (2003).

[8] Op. cit.

[9] As we shall see later in this chapter — and mainly due to the organisation derived from the *henequen hacienda*, Yucatán's population is distributed among numerous rural communities and few cities, quite different to the composition of most 'maquilador' states in the north of the country.

[10] Interviews with Mr. Jorge Torre and Augusto Pérez of the Secretariat of Industrial and Commercial Development (2003).

least polluting and most labour-intensive ones. In addition, Mérida could develop its industrial parks by promoting jewellery, dentistry and a few electro-mechanic maquiladoras.[11]

The location of clothing maquila plants in the ex-henequen region was not a problem, since labour-intensive maquiladoras required little infrastructure and low-skilled labour. Moreover, their proximity to the USA and past experience in crafting embroideries were essential advantages the state of Yucatán could exploit to attract foreign investors (Castilla and Torres, 1999a; Castilla and Torres, 1999b; Castilla and Torres, 2000).[12] Although there was a clear intention to introduce clothing maquiladoras in the ex-henequen region by 1985 and backed by consecutive government administrations, it was not until 1995 that the first big clothing maquiladora was installed in the ex-henequen region (Monty in Motul).[13]

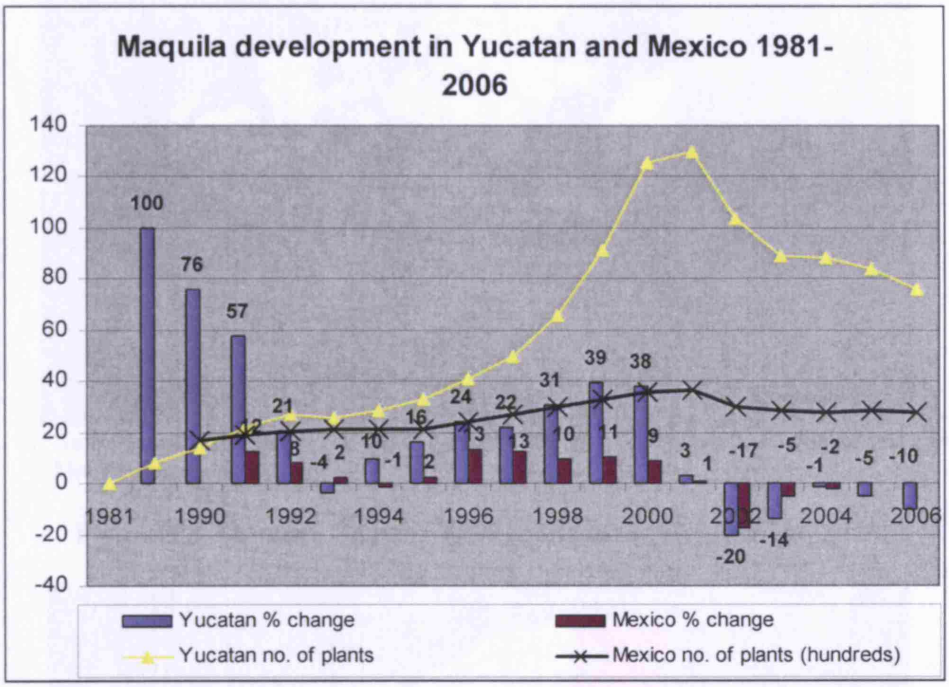
The main reason for that delay was that the states' infrastructure had to be improved and renewed, notably the Port of Progreso and the roads connecting Mérida and several municipalities to the port.[14] Since maquiladoras at that time already operated under 'Just in time' (JIT) production processes, it was of vital importance to ensure that materials to be assembled would arrive at the plants in time (in this case denim cloth imported from the USA), as would the final products to be merchandised in the USA (jeans). In addition, in order to facilitate maquila production, local governments had to develop a minimum infrastructure to ensure an adequate water and electricity supply. Housing for foreign executives was not an issue, since the proximity to Mérida of all ex-henequen municipalities meant that everyday commuting by car was possible. In addition, an effective air bridge from Cancún to Mérida was assured.[15] Moreover, Mérida is a popular tourist destination, considered to be among the most peaceful and beautiful colonial cities in Mexico.

Therefore, once the essential infrastructure that would allow maquiladoras to operate under JIT processes was assured, clothing maquiladoras gradually began to appear all over the ex-henequen region (and beyond) (Albornoz, 2000; García de Fuentes and Morales, 2000; Canto, 2001; Castilla, 2004; Labrecque, 2005). Although the evolution of the EMI was characterised by severe periods of crisis and recovery, Yucatán has been among the fastest growing maquilador states since 1982 (Figure 5.1). The enthusiasm with which international and national investors embraced the Maquiladora Programme for Yucatán was remarkable. A strategic

[11] Op. cit.
[12] Op. cit.
[13] Interview with Mr. Castillo (2003) the ex-municipal president of Motul when Monty installed.
[14] Op. cit.
[15] Op. cit

location, abundant labour force and the economic depression of several municipalities, combined with state investments in infrastructure made the maquiladora programme for the ex-henequen region (and Mérida) an attractive investment option.

Figure 5.1: Evolution in the Number of Maquiladoras in Yucatán Compared with the Evolution of the EMI at a National Level



Source: INEGI (2007)

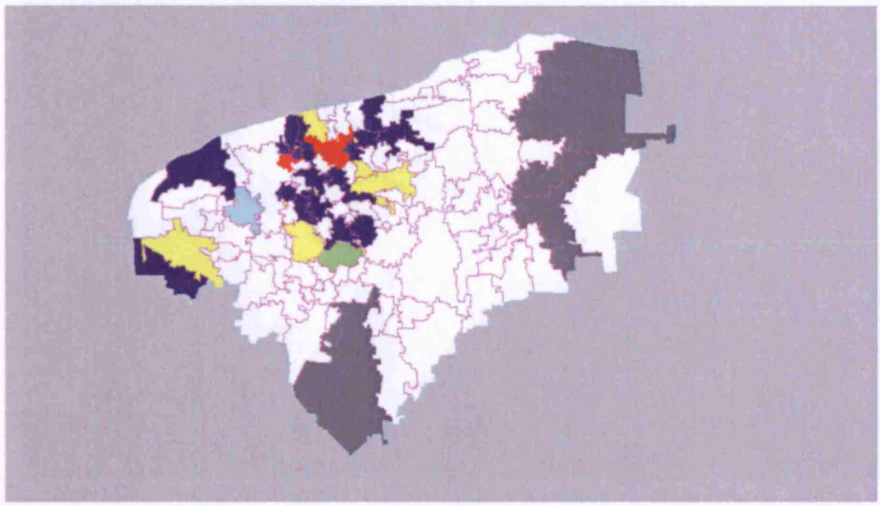
Nevertheless, the consolidation of the maquila industry in Yucatán and the ex-henequen region was not without setbacks. In Mérida and many (ex-henequen and interior) municipalities, several maquiladoras 'came in' and rapidly went out of business, particularly between 2001 and 2006 (Figure 5.1). The US economic recession and Chinese competition in the clothing industry impacted on the maquila industry in Yucatán, and particularly that of the ex-henequen region.[16] Motul itself hosted two small, Mexican-owned clothing maquiladoras, located just in front of Monty's plant, which closed in 2002 and never re-opened (see figure 5.4).[17]

The data show that in 2001 the ex-henequen region (and a few other interior municipalities that are not part of the ex-henequen region) hosted 43 maquiladoras, located in 32 of the 61 (mostly ex-henequen) municipalities (Figure 5.2).[18] By 2005, 32 maquiladoras remained, mostly in the ex-henequen region and were located in just 19 municipalities (Figure 5.3). More generally, in

[16] Op. cit.
[17] Op cit.
[18] The ex-henequen region is composed of 61 municipalities. The state of Yucatán has 106 municipalities. In 2005 there were 54 maquiladoras located in Merida.

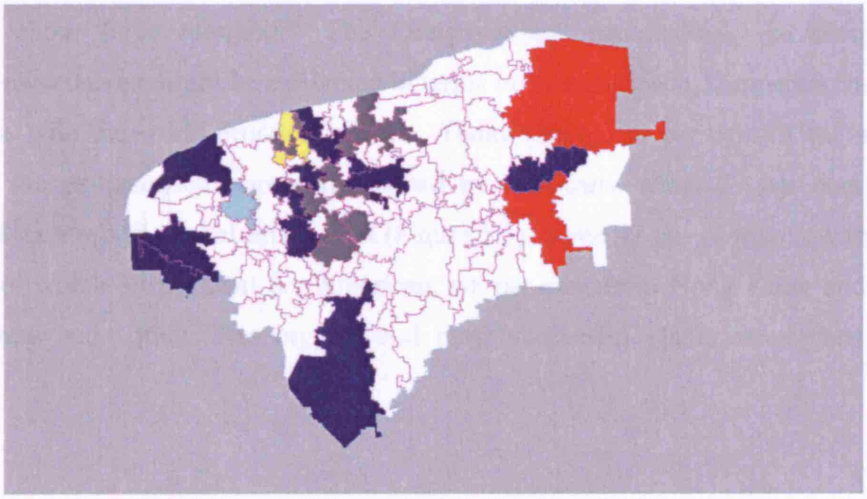
2005 the state of Yucatán had around 85 maquiladoras in total, of which 32 were located mostly in the ex-henequen region and 53 in Mérida (Castilla, unpublished 2006).

Figure 5.2: Absolute Number of Maquiladoras by Location, 2001



Note: Grey=0, Dark Blue=1, Yellow=2, Red=3, Green=4, Light blue=6. Mérida was excluded, Motul appears in red.

Figure 5.3 Absolute Number of Maquiladoras by Location, 2005

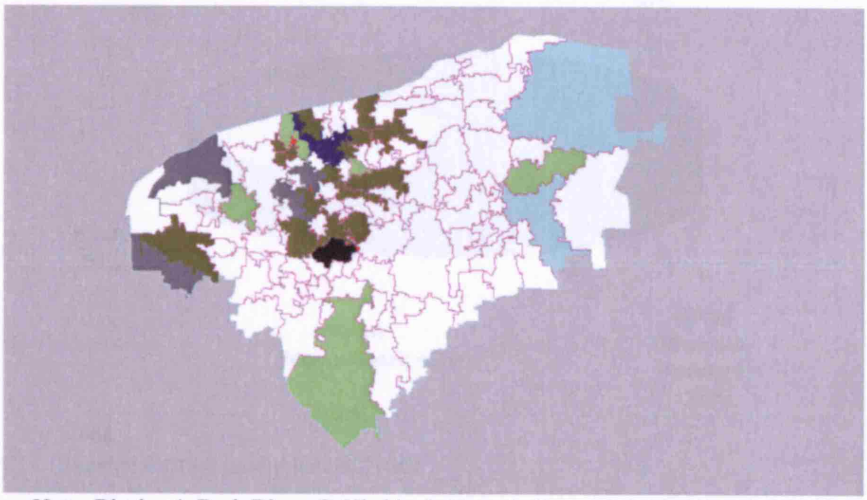


Note: Grey=0, Dark Blue=1, Yellow=2, Red=3, Light Blue=7. Mérida was excluded, Motul appears in blue.

The 25 per cent fall in the number of maquiladoras located in the ex-henequen region between 2001 and 2005 shows that the EMI in the ex-henequen region (just as the EMI in Yucatán and eventually in Mexico) went through periods of crisis, recovery and consolidation. For some reason, new maquiladoras located in the east and south of the state of Yucatán, while most maquila plants that went out of business were located in Motul and throughout the ex-henequen

region (see Figure 5.4). According to interviews, it was usually the locally-owned maquiladoras that could not survive the Chinese competition.[19]

Figure 5.4: Absolute Differences in the Number of Maquiladoras by Location, 2001-2005

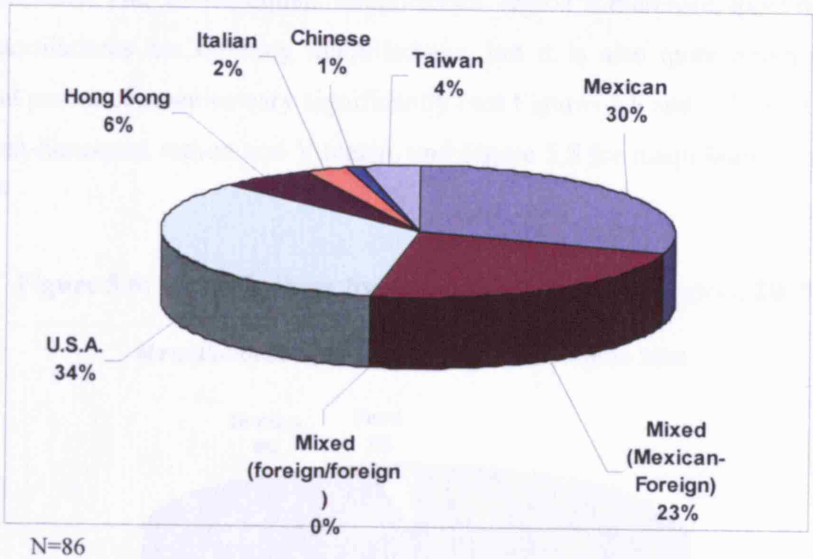


Note: Black=-4, Dark Blue=-2, Khaki=-1, Grey=0, Green=1, Light Blue=3. Mérida was excluded. Motul appears in dark blue.

In general, foreign-owned maquiladoras proved to be more successful and more capable of implementing new production processes in the region and coping with the adaptation period that the local labour force required.[20] The foreign-owned maquiladoras' advantage over the nationally-owned ones might be explained in terms of its experience, competitiveness and solid connections with the world-productive chain. Today (2006), 30 per cent of the maquiladoras located in the ex-henequen region are owned by Mexicans, while 23 per cent count were established with mixed capital investment (Figure 5.5). Some 47 per cent are owned by foreign investors, of which 34 per cent are American, six per cent from Hong Kong and fewer from Taiwan, Italy and China. The biggest and most successful plants are owned by foreign investors.

[19] Interview with Mr. Castillo, Mr. Jorge Torre and Mr. Ausgusto Pérez (2003).
[20] Op cit.

Figure 5.5: Maquila Investors in Yucatán, 2006



N=86
Source: Castilla (unpublished, 2006)

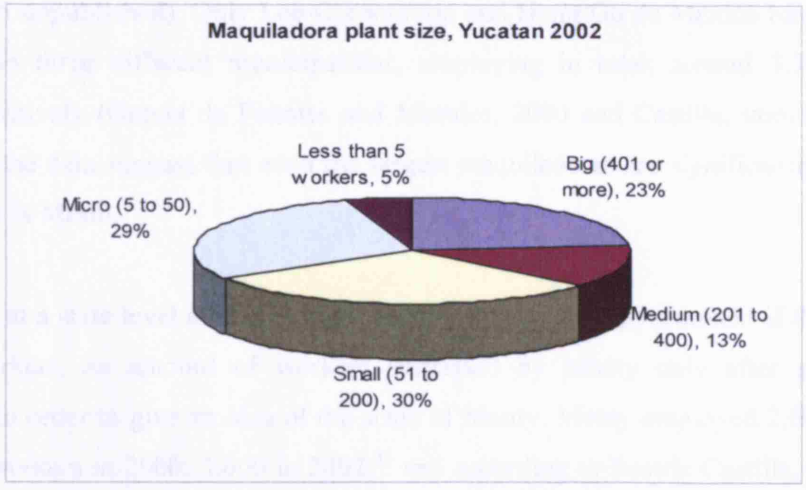
Since 2004, the EMI of Yucatán seems to have reached a more stable situation, although fluctuations in employment remain common and are related to US economic cycles and high turnovers.[21] It is essential to note that even if most maquiladoras operating in the ex-henequen region are clothing maquiladoras, they are very different in size and have differing levels of experience in the global market. In fact, maquiladoras in the ex-henequen region differ in their capacity to compete on a global scale and in their capacity to implement more 'modern' management and labour practices (see Labrecque, 2005). The consequences derived from a maquiladora's size and their position in the world market are far reaching.

As the literature on the maquiladoras indicates, plant-size and parent company are the most important factors to predict the maquiladora's capacity to cope with negative economic cycles and high turnovers (Fatemi, 1990; Wilson, 1996). In addition, large plants make large investments that suppose a long-term commitment with the local authorities and the local labour force. Other advantages, such as better working conditions, extra benefits for the workers and, in some cases, the existence of a well-defined environmental policy, may also result from an increase in the capacity and prestige that maquiladoras might have.

Despite the fact that most maquila plants in the ex-henequen region are clothing maquiladoras, and thus, labour intensive; these vary significantly in size and many assemble clothes for small firms that are weakly positioned in the world market (see Figures 5.6 and 5.8). Monty is a very

[21] Interviews with accountant Juan Mena, the manager at Monty, and with Mr. Jorge Torre (2003).

Figure 5.8: Maquiladoras by Size, Yucatán, 2002



N=111
Source: Castilla (unpublished, 2006)

The Monty Industries in Perspective

The Monty's plant in Motul is very special for several reasons. First, Monty is easily one of the biggest maquiladoras in the state. Second, it is among the most modern and prestigious. And third, it is among the oldest.

According to INEGI (2007) and Dr. Castilla (2006, unpublished) Monty's share of the total employment in the region[23] reached around 23 per cent in 2005. Although I did not have access to figures for more years, the interview data suggests that Monty Industries most probably employed a significantly larger share of the total maquila workers of the ex-henequen region in the past, when there were fewer maquiladoras and Monty employed around 2,000 assembly line workers.[24] Due to its relatively long time operating in Motul, its large size and high turnover, Monty has employed significantly more workers than any other maquiladora in the state, perhaps even more workers than several (small, medium size) maquila plants together, over the past ten years.[25]

Monty's capacity to assemble jeans for the most prestigious American brands enabled them to grow and develop their activities to an unexpected scale. Surprisingly for the managers, Monty was compelled to open a second, smaller plant in Maxcanu and a third one in Hunucmá, which

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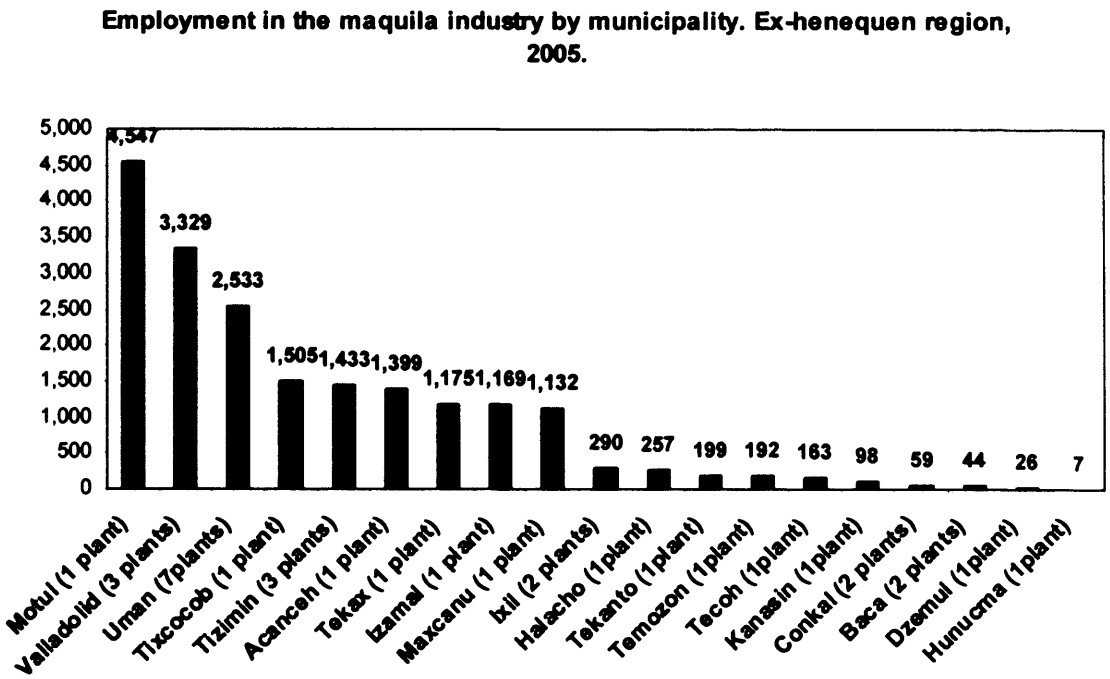
[23] That is Motul and the surrounding municipalities where Monty workers live.
[24] Interview with Mr. Castillo (2003), ex-municipal president of Motul.
[25] Op. cit.

closed in June 2002.[26] Today, Monty employs a total of around 5,600 workers in its two plants (Castilla, 2006 unpublished). Only Lee Corporation and Hong Go de Mexico have also opened three plants in three different municipalities, employing in total, around 3,700 and 1,800 workers respectively (García de Fuentes and Morales, 2000 and Castilla, unpublished 2006). Furthermore, the data suggest that even the largest maquiladoras are significantly smaller than Monty's plant in Motul.

Maquiladoras at a state level are categorised as 'big' by the state government if they have more than 400 workers, an amount of workers surpassed by Monty only after six months of operations.[27] In order to give an idea of the scale of Monty, Monty employed 2,000 workers by 1996; 4,200 workers in 2000; 3,600 in 2002;[28] and according to Beatriz Castilla, 4,500 in 2005 (Castilla, 2006 unpublished). In comparison, the second largest maquiladora (Jerzees Yucatán) employed around 1,500 workers in 2005, and is part of the selected group of just eight maquiladoras located in the ex-henequen region, employing more than 1000 people (García de Fuentes and Morales, 2000 and Castilla, unpublished 2006). Twenty-five per cent of the total maquiladoras in the ex-henequen region could be categorised as 'very big' — with more than a thousand workers — and only Monty's plant in Motul, as 'extremely big' — with more than four thousand workers (see Figure 5.10 for plant size as categorised by the state government).

[26] Interview with Lic. Netemby (2003) human resources manager at Monty (Maxcanú plant).
[27] Interview with Lic. Juan Mena (2003), manager at Monty.
[28] Op. cit.

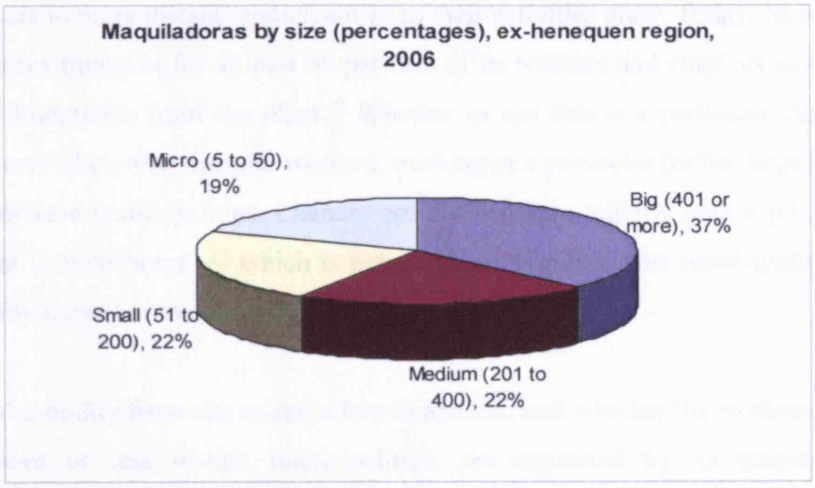
Figure 5.9: Maquiladora Employment in the Ex-henequen Region (Number of Workers by Municipality)



Source: Castilla (2006, unpublished data)
Note: Dr. Castilla's data includes all the employment that the maquiladoras provide in each municipality, including staff and 'external' employees.

Although the data given by Dr. Castilla only show the total number of workers and the number of plants per municipality — without differentiating 'plant size' when more than one plant is located in a specific municipality — the data suggest that most maquiladoras in the ex-henequen region are micro (0 to 50 workers), small (51 to 200 workers) or medium in size (from 201 to 400 workers) (63 per cent) (Castilla unpublished 2006 see also Labrecque, 2005) (Figures 5.9 and 5.10).

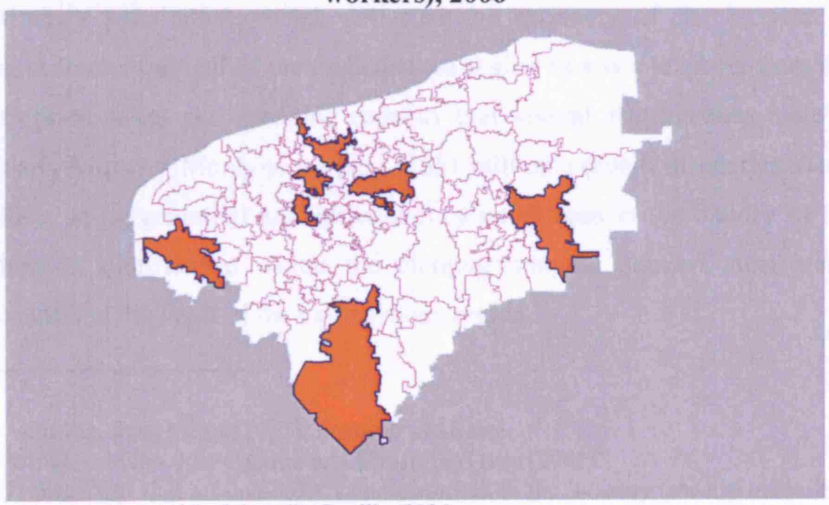
Figure 5.10: Average Maquiladora Size in the Ex-henequen Region, Percentages, 2006



Source: Castilla (2006, unpublished data)

Therefore, the impact that Monty has had in the region after more than ten years of operations in Motul could well be significantly greater than the overall aggregated impact of all other smaller maquila plants, particularly when considering the historically 'high' turnovers at Monty, and also its historically large size[29] (more detail is given in Chapter Six). However, it is not possible to give an accurate measure to differentiate the impact of Monty from that of other clothing maquiladoras of the ex-henequen region with the available data. Figure 5.11 shows the municipalities with maquiladoras employing more than 1000 workers.

Figure 5.11: Very Large Maquiladoras in the Ex-henequen Region (With More than 1000 workers), 2006



Source: Unpublished data, Dr Castilla (2006)
Note: there is only one maquiladora per municipality.

[29] Interview with Lic. Juan Mena (2003), manager at Monty.

It is very significant, though, that large plant-size and high turnovers at Monty forced managers to seek workers in more distant municipalities as their activities grew. Today, Monty (the Motul plant) subsidises transport for at least 50 per cent of its workers and employs workers that live as far as 50 kilometres from the plant.[30] Whether or not this is a particular characteristic of Monty, it is very likely that maquila workers, working at a particular (rather large) maquiladora, come from diverse municipalities. Chances are that workers initially seek a job at the closest maquila plant to their home — which is not necessarily in the same municipality — and that they eventually move to other maquila plant after some time.[31]

The workers' mobility from one maquiladora to another, and whether the workers are willing to travel to more or less distant municipalities, are explained by 1) scarce employment opportunities in the region; 2) high turnovers in the sector; 3) similar salaries among maquiladoras; and 4) fairly good transportation between municipalities.[32] Like in the clothing maquiladoras of the north (Young, 1986; Fatemi, 1990; Kopinak, 1995; Wilson, 1996), mobility of workers from one maquila plant to another and long travel distances to the plants are not uncommon in the ex-henequen region.

More generally, today's clothing maquila network employs a substantial amount of workers (19,557 according to unpublished data provided by Dr. Castilla, 2006)[33] coming from diverse municipalities. However, Mr. Castillo (the municipal president of Motul in 1992 and head of the Technical High School of Motul) attributed this to a sub-regional economic 'chain reaction' following Monty's installation, which activated the economy of the broader ex-henequen region.[34] The economic revival of the ex-henequen region as a whole stems from the additional employment opportunities and spending capacity that several maquiladoras have brought, but most particularly Monty.[35] Monty alone pays US$1 million a month in salaries to assembly line workers (2002), an (aggregated) amount of money never seen in the history of the henequen region.[36] Monty's significance within the clothing maquila network also stems from its 'strategic' location at the heart of the ex-henequen region.

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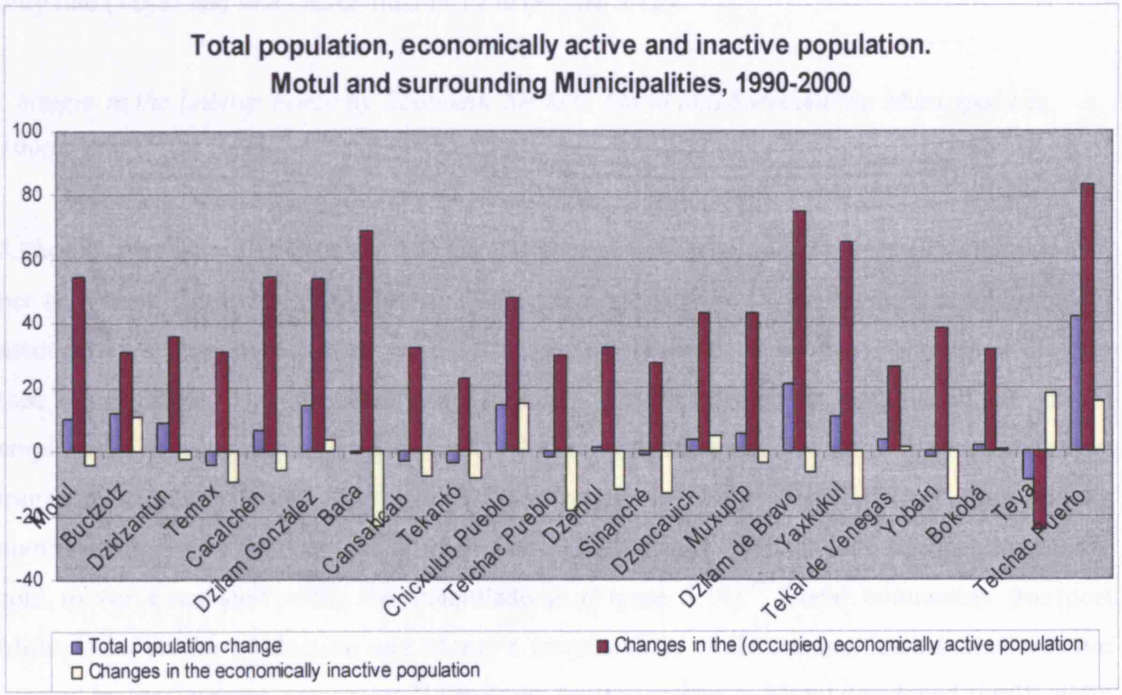
[30] Op. cit.
[31] Interview with Lic. Juan Mena (2003), manager at Monty.
[32] Interview with Lic Mena, Mr. Castillo and Mr. Jorge Torre (2003).
[33] The INEGI data show that around 9,000 people worked in the industry (mostly maquila) sector in the region (in 2005). The differences between Dr. Castilla's and INEGI data might be explained by the fact that INEGI only reports the number of assembly line workers at the maquiladoras, while Dr. Castilla's data account for all types of employment that the maquiladoras provide per municipality (including staff and external employees providing different kinds of services on a regular basis).
[34] Interview with Mr. Castillo (2003).
[35] Op. cit.
[36] Op.cit.

5.4 The Impact of Monty in the Ex-henequen Region: INEGI Data on Employment and other Economic Indicators

INEGI census data indicate a significant 45 per cent increase in employment among the inhabitants of the city of Motul and selected municipalities (which host Monty workers), over the period 1990-2000 (INEGI, 2007). Such an increase in the 'Occupied Economically Active Population' (OEAP) of the region, contrasts with a discrete 5.9 per cent total population growth (INEGI, 2007) (Figure 5.12).

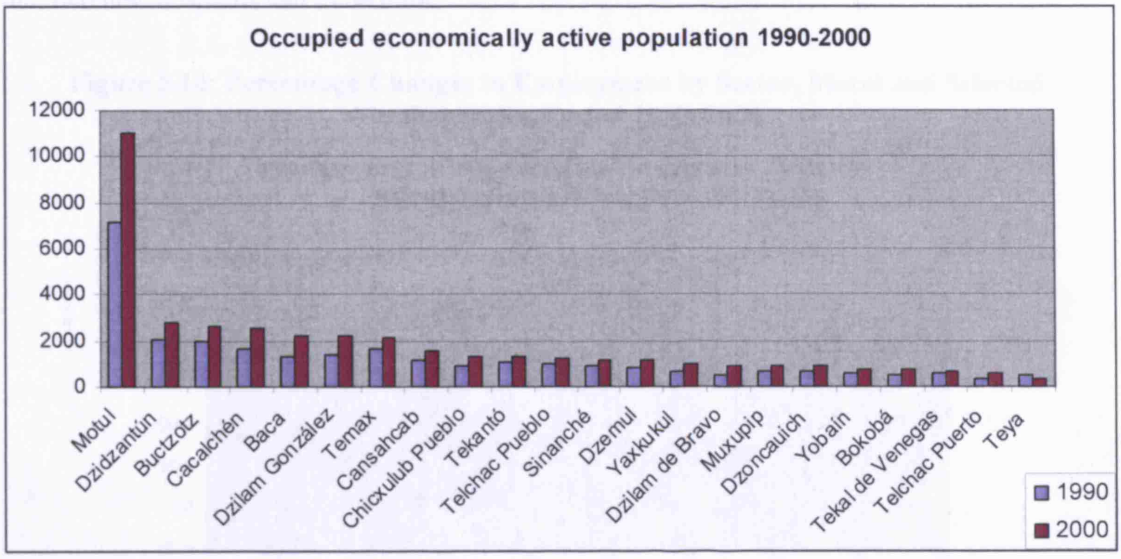
As it is reasonable to expect, the city of Motul and some of the most populated municipalities experienced a higher absolute growth in their OEAP (Figure 5.13). In addition to their larger size, Motul and larger municipalities often host (or have hosted) one or more maquiladoras, and have more developed labour markets. However, all small municipalities hosting Monty workers (except Teya) experienced a relative growth of at least 23 per cent of their OEAP, most growing between 30 per cent to 60 per cent (Figure 5.12).

Figure 5.12: Percentage Change in the OEAP, 1990–2000



Source: INEGI (2007)
Note: Municipalities are ordered by size, from the most populated to the least populated. See appendix p. 385 for total population per municipality.

Figure 5.13: Absolute Numbers of Economically Active Population (1990 and 2000), Motul and Surrounding Municipalities



Source: INEGI (2007)
Note: Municipalities are ordered by size, from the most populated to the least populated.

Only seven municipalities had more economically inactive people in the year 2000 than in 1990 — a phenomenon that is linked to migration, population decrease and/or population aging, and only one (Teya) had less OEAP than in 1990 (Figure 5.12).

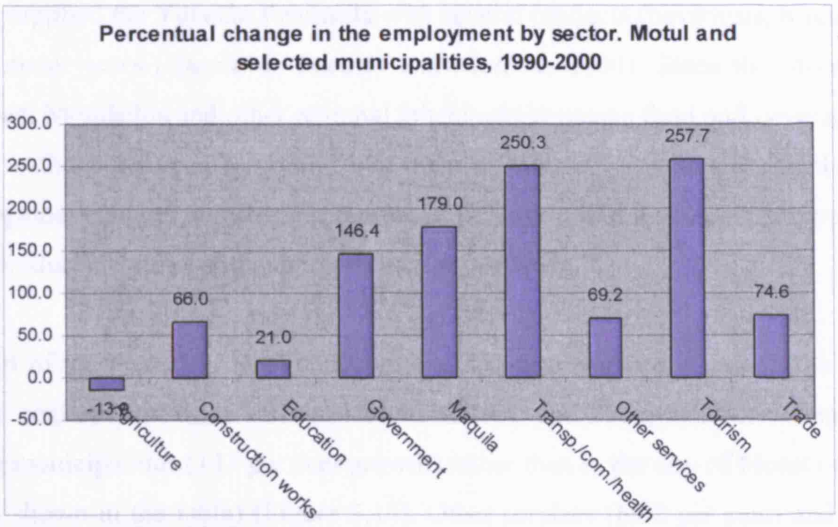
Changes in the Labour Force by Economic Sectors, Motul and Surrounding Municipalities, 1990–2000

Although tourism was the sector that in relative terms attracted more people (it employed 258 per cent more people in 2000 than in 1990), the total increase in employment is undoubtedly associated with the development of the Maquiladora Programme for the Ex-henequen Region (see Figure 5.14). The 'manufacturing industry' itself (classified as maquila on the graph) employed 179 per cent more people in 2000 than in 1990, surpassed only by tourism and by transport, communications and health taken together (Figure 5.14). Those three sectors combined employed 250 per cent more people in 2000 than in 1990, and are services commonly sold to (or associated with) the maquiladoras (Figure 5.14).[37] Local contractors transport Monty's inputs for production and Monty's merchandise, while communication networks are assured by local private companies.[38] Similarly, health services in Motul developed significantly

[37] Interviews with Lic. Mena and Mr. Castillo (2003).
[38] Op. cit.

as Monty workers and their families became entitled to Social Security Services, to the point that two new hospitals had to be built.[39]

Figure 5.14: Percentage Changes in Employment by Sector, Motul and Selected Municipalities, Period 1990–2000



Source: INEGI (2007)
Note: Adjustments in the census data were necessary since the categories for the different economic sectors for the year 1990 were not exactly the same as for the year 2000. Some of the categories in my graphs changed or might include one or more economic sectors combined, and for that reason do not exactly match INEGI categories.

The government ranked fourth in its capacity to employ more workers regionally in 2000 than in 1990, with a 146 per cent increase (Figure 5.14). As the interviews revealed, the government budget increased significantly with the advent of the maquiladora industry. For the first time tax payers paid council tax, water and electricity services, thus allowing the local government to draw up new public policy and provide more services — which, in turn, might explain the significant increase in the number of government employees.[40]

In addition, as we shall see in more detail in Chapter Six, maquila employment appears to be distributed among a relatively limited number of families. Most Monty workers have a relative working at Monty too and the households of Monty workers seem to get most of their supplies in local markets — and not in Mérida, as Motuleño commuters have been doing for several decades.[41] 'Concentrated' income distribution among regional households and increase in local consumption, seem to be part of the positive and unique economic aspects derived from maquila activities in the ex-henequen region.[42]

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[39] Interview with Mr. Castillo (2003).
[40] Op. cit.
[41] Op. cit.
[42] Op. cit.

Contrary to the spending habits of rural Yucatecan maquila workers, maquila workers in northern cities often buy their products on the other side of the border, and otherwise, they tend to buy merchandise imported from the USA (Fernández-Kelly, 1989; Sklair, 1993; Sotelo, 2004). In contrast, Mérida's food industry has been very important for many years (and still is), since it has supplied the Yucatán Peninsula with several products (beverages, biscuits and other goods) for many years (García de Fuentes and Morales, 2000). Since the Monty plant was installed, local Motuleños and other regional inhabitants consume food and beverages produced in the state without the need to go and buy them in Mérida.[43] An increase in the purchasing power of regional maquila workers resulted in an increase in the local market supplies — often selling the products of small and medium-scale local farmers.[44]

Thus, as part of the revival in local consumption, 75 per cent more people in the ex-henequen region were employed in trade activities between 1990 and 2000, most of whom lived in the surrounding municipalities (147 per cent growth) rather than in the city of Motul (-63.5 per cent growth, not shown in the table) (Figure 5.14). Other services (69.2 per cent) and construction works (66 per cent) also employed more people, although at a less impressive rate because more people were already employed in those sectors. Seemingly as a result of the economic revival of Motul and the surrounding municipalities, employment rates in education rose by 21 per cent and agriculture decreased by 14 per cent (Figure 5.14).

Changes in Income Generation by Sector, Motul and Surrounding Municipalities 1989–1999

Data on income generation by sector give a clear idea of the economic revival (although on an aggregated basis) experienced in Motul and the surrounding municipalities between 1989 and 1999. On average, income derived from the service sector rose by 645 per cent, while income derived from trade rose by 707 per cent and income from the industry sector (mostly maquila in this case) rose at an impressive 5,379 per cent (numbers are averages taken from Figure 5.15).[45] The income from these three sectors in Motul and surrounding municipalities rose dramatically by 904 per cent, in only ten years (Table 5.4).

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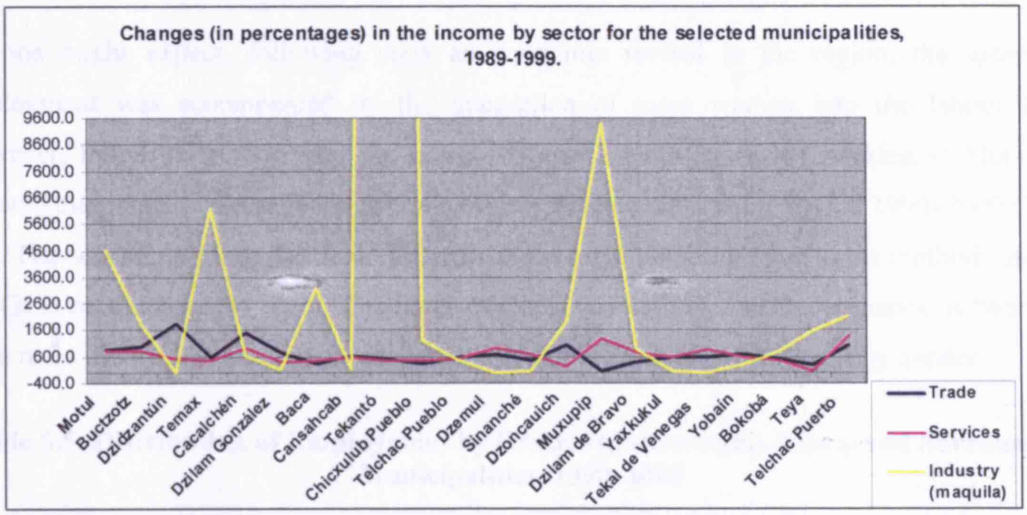
[43] Interviews with Jorge Torre and with Mr. Castillo (2003).

[44] Op. cit.

[45] It must be specified that Tekanto and Muxupip contributed greatly to the average percentage growth, although those municipalities do not contribute in a significant proportion to the total income derived from industrial activities (maquila in this case). The income derived from industry in those municipalities grew by 82,836% and 9,380% respectively.

Figure 5.15: Percentage Change in Income by Sectors of the Economy, 1989–1999



Source: INEGI (2007)
Note: Tekanto's percentage change for the industry sector is given in the foot note in the prior page.

Table 5.4: Income by Sectors (Thousands of Pesos), Motul and Selected Municipalities, 1989–1999

	1989	1999	1989-1999 differences	1989-1999 % change
Services	7853.8	60301	52447.2	667.8
Maquila	5409.5	97475	92065.5	1701.9
Trade	44839.3	425369	380529.7	848.7
Total	58102.6	583145	525042.4	903.6

Source: INEGI (2007)

The income derived from services increased at a similar pace in all municipalities — by between 400 and 1600 per cent (Figure 5.15). The changes in income by trade were also impressive, but not so uniform; a phenomenon that is most probably related to differences in local consumption among maquila workers and to the trade activity carried out before the Maquiladora Programme in each municipality. Dzinzantun, Cacalchén and Dzoncahuich, in particular, grew by almost 1600 per cent, most probably because there was little trade before 1995 in those municipalities (Figure 5.15).

The changes in income derived from industrial activity (maquila) were the most striking and the most irregular among municipalities. This can be explained by 1) differences in the number of maquila workers per municipalities 2) by the fact that not all municipalities have hosted or host maquiladoras today, and 3) few municipalities were engaged in industrial activity in the past. The industrial activity recorded by INEGI (in 1989) mainly referred to a few construction material factories (see García de Fuentes and Morales, 2000).

Changes in Employment by Gender, Motul and Surrounding Municipalities 1990–2000

As one might expect, following such an economic revival in the region, the growth in employment was accompanied by the integration of more women into the labour force. However, INEGI data show that the ratio of women (relative to men) working in Motul and selected municipalities rose by an average of only nine per cent in the period 1990–2000 (Table 5.5). The seemingly limited growth in female employment might be due to the methods used by INEGI to measure employment. The range of categories used to consider someone as 'working' seem to be too wide to adequately show changes in the share of employment by gender.

Table 5.5: Distribution of Employment by Gender (percentages). Motul and Surrounding Municipalities, 1990–2000

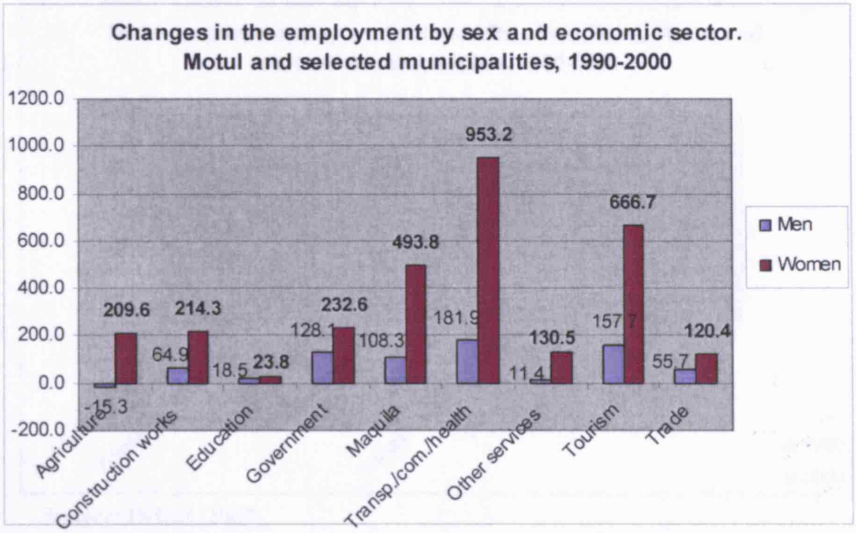
	1990		2000		Difference	
	Men	Women	Men	Women	Men	Women
State	75.9	24.1	66.7	33.3	-9.2	9.2
Motul	77.4	22.6	69.5	30.5	-7.9	7.9
Municipalities	79	21	68.9	31.1	-10.1	10.1

Source: INEGI (2007)

The figures on employment by sectors show that percentage changes in female employment rose dramatically.[46] There was a 953 per cent increment in female employment in transport, communications and health (taken together) during the period 1990–2000 (although health was the sector that employed the most women) (Figure 5.16). Tourism, on the other hand, employed 667 per cent more women in 2000 than in 1990, and the industry sector (maquila in the figures) 494 per cent (Figure 5.16). The government, construction works and agriculture also increased their incorporation of women at impressive rates (Figure 5.16). However, it is important to note that the high percentage growth in female employment by sector is partially explained by the reduced number of women working in those sectors in 1990 (see Figure 5.17).

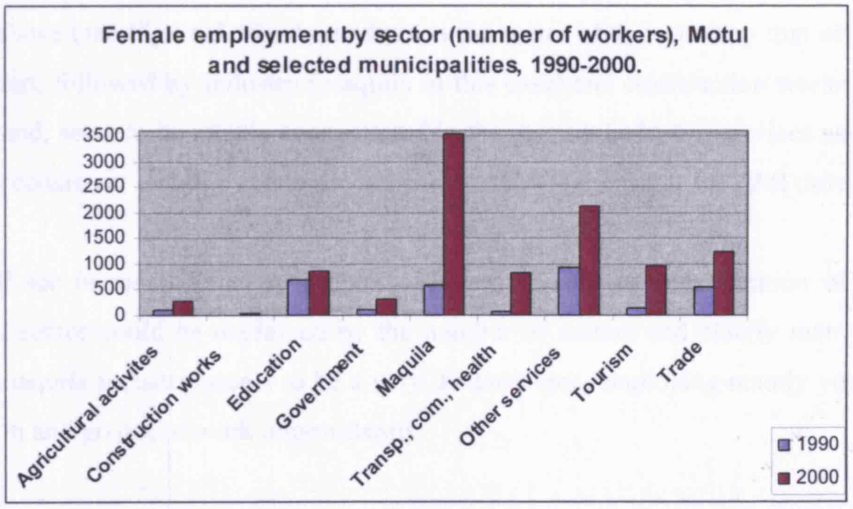
[46] The official Mexican data on employment has been criticised by several authors, because it does not properly reflect unemployment and underemployment. Alternative data on labour statistics in Mexico can be found in Fleck (1994), Ochoa (2001), Parrado (2005), Salas (2001) and Zarsky (2004).

Figure 5.16: Percentage Change in Employment by Gender and Sector, 1990–2000



Source: INEGI (2007)

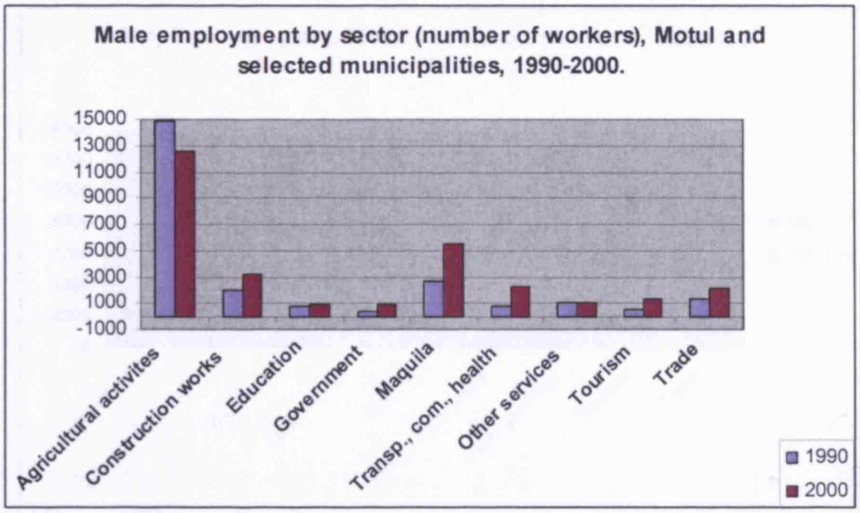
Figure 5.17: Female Employment by Sector, Absolute Numbers, 1990–2000



Source: INEGI (2007)

On the other hand, men, who were the traditional labour force of the henequen region for centuries (Moseley, 1980; Restall, 1997; Gabbert, 2004), seem to have taken more jobs in transport and communications (182 per cent), tourism (157 per cent), the government (128 per cent) and the industry sector (maquila in the figures, 108 per cent) (Figure 5.16). Here again, the figures on the relative growth of male employment by sector have to be treated with caution, since not all sectors employed the same amount of men in 1990 (see Figure 5.18).

Figure 5.18: Male Employment by Sector, Absolute Numbers, 1990-2000

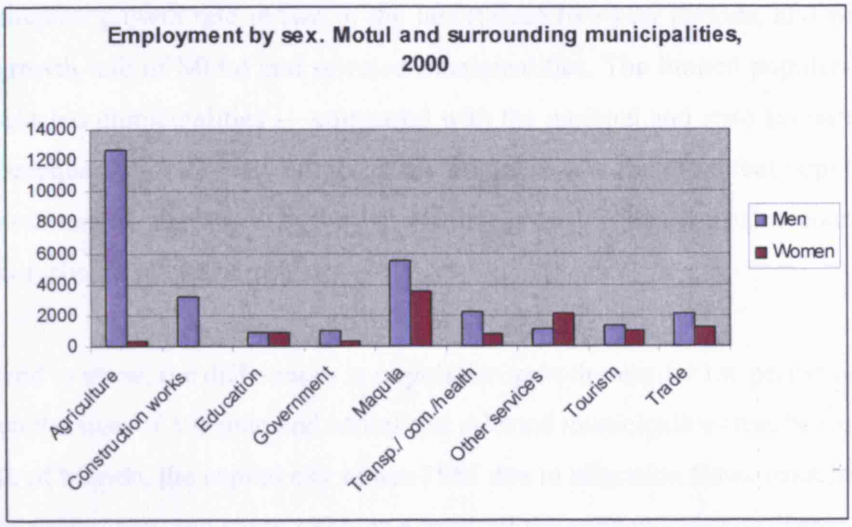


Source: INEGI (2007)

In fact, an examination of the distribution of the employment by sector and gender for the year 2000 gives a totally different picture from the impressive percentage growth in employment described above (see Figure 5.19). Agriculture is the sector of the economy that employs by far the most men, followed by industry (maquila in this case) and construction works. Women on the other hand, seem to be mostly concentrated in the maquila industry, services and health. All of which is consistent with the economic transition of the region since the EMI developed.

As we will see in more detail in Chapters Six and Seven, the concentration of men in the agricultural sector could be explained by the number of mature and elderly men working the land. The maquila industry seems to be a very dynamic one, employing mainly young workers who come in and go out of work intermittently.

Figure 5.19: Employment by Gender and Sectors, Absolute Numbers, 2000



Source: INEGI (2007)

5.5 Population Changes in Motul and Selected Municipalities 1990–2005

The population of the selected municipalities taken as a whole has registered a slight increase of 5.9 per cent in 2000 with respect to 1990 figures (Table 5.6). The increment can be divided into two five-year periods. From 1990 to 1995 there was a 3.6 per cent increase in the population, while from 1995 to 2000 (when Monty arrived to Motul) the population increase was 2.2 per cent (Table 5.6). What this suggests is that during the period 1995–2000 the Maquiladora Programme for the Ex-henequen Region did not particularly encourage population growth.

Table 5.6: Percentage Population Change for Different Periods, Mexico, Yucatán and Motul and Selected Municipalities

	1990-1995	1995-2000	2000-2005	1990-2000
Mexico	9.6	7.4	5.8	17.8
Yucatán	14.2	6.5	10.7	20.6
Motul and municipalities	3.6	2.2	4.7	5.9

Source: INEGI (2006) and CONAPO (2007)

However, from 2000 to 2005 the population of Motul and selected municipalities increased by 4.7 per cent (Table 5.6). What this shows is that in the last five-year period Motul and the surrounding municipalities have grown more than in the two previous five-year periods, reaching a growth of only one percent beyond the national average for the first time in ten years. On the other hand, the population of the state grew by 20.6 per cent over the period 1990–2000, which contrasts with the discrete 5.9 per cent population growth of Motul and selected municipalities during the same decade (Table 5.6).

Moreover, the rate of population growth in the state of Yucatán has been well above the average national population growth rate in two of the last (three) five-year periods, and well above the population growth rate of Motul and selected municipalities. The limited population growth in Motul and selected municipalities — compared with the national and state average — suggests that the ex-henequen region barely attracted any migrants, and therefore that population growth in the region is mostly explained by births. Natural growth is known to be common in rural areas and, thus, should not be surprising.

As I will intend to show, the differences in population growth rates for the period from 1990 to 2005 between the state of Yucatán and Motul and selected municipalities can be explained by: 1) the growth of Mérida, the capital city (since 1985 due to migration flows from Mexico City following the earthquake, and since 1994, as a result of the economic crisis) (Table 5.7 shows the available data); 2) by the incapacity of semi-rural regions to attract significant numbers of migrants; 3) by persistent emigration in the region; and 4) by high birth-rates.

Table 5.7: Population Growth, Yucatán and Mérida, different periods

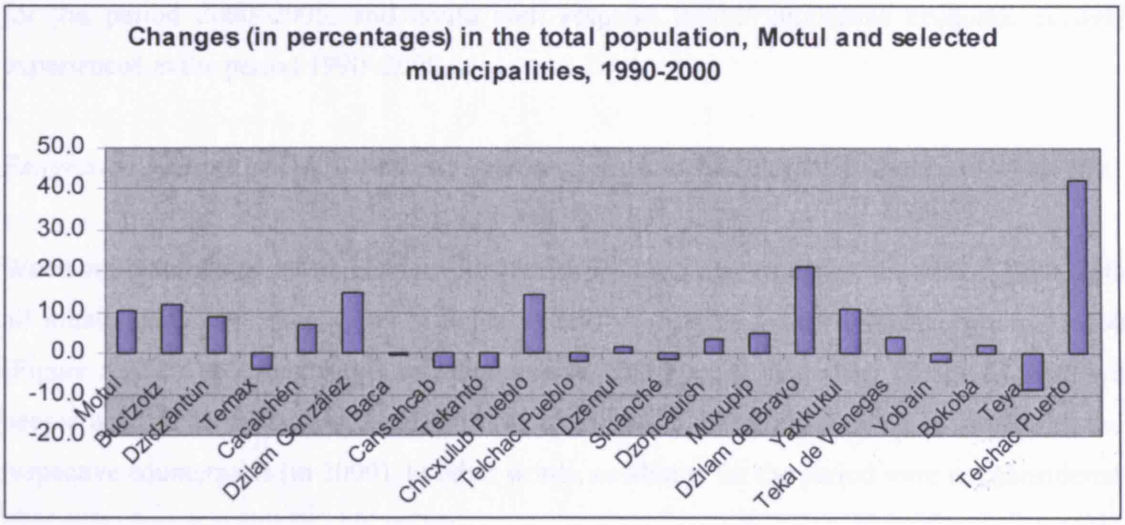
	1980	1990	1995	2000
Yucatán	1063733	1362940	1556622	1658210
Mérida	n.a.	556819	649770	705055
Mérida as % of the population of Yucatán	n.a.	40.9	41.7	42.5

Source: INEGI (2007)

The Population Decrease in a Number of Ex-henequen Municipalities 1990-2000, 2000-2005

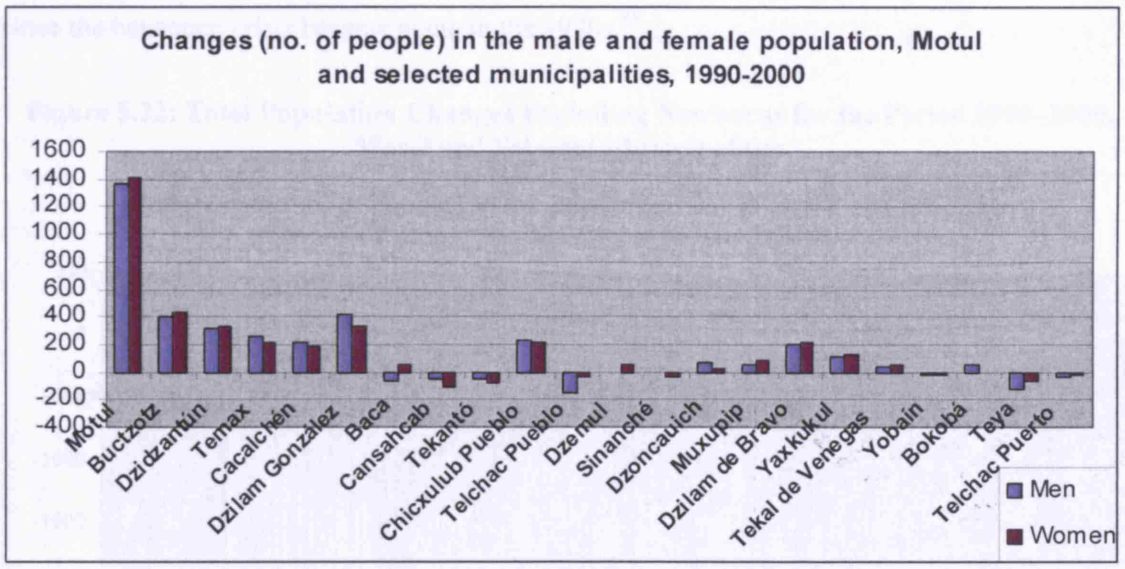
Despite the overall population growth, many municipalities (7 out of 21) have experienced a slight decrease in their total population during the period 1990–2000, due to decreases in both their male and female populations (Figure 5.20). Of these municipalities, four expelled slightly more men than women (Baca, Telchac Pueblo, Teya and Yobain), and three slightly more women than men (Cansahcab, Sinanche and Tekanto) (Figure 5.21). Overall, the expulsion of men and women seems to have been pretty balanced, which suggests that often men and women migrate together or join their partner after some time.

Figure 5.20: Percentage Changes in the Total Population by Location, 1990–2000



Source: INEGI (2007)
Note: Municipalities are ordered by size, from the most populous to the least populous. See appendix p. 385 for total population per municipality.

Figure 5.21: Absolute Changes in the Population by Gender and Location, 1990–2000



Source: INEGI (2007)
Note: Municipalities are ordered by size, from the most populous to the least populous.

However, six of the municipalities which experienced a population decrease in the period 1990–2000, clearly recovered in the last five-year period (2000–2005), passing from a population decrease to an overall population growth (not shown in Figures). Baca, Telchac Puerto and Temax are now growing at a rate of around six per cent, while Cansahcab, Teya and Yobain grew at a rate of around one per cent (INEGI 2007). All other municipalities that expelled people during the period 1990–2000 (Tekantó, Telchac Pueblo and Sinanché) still did so during the period 2000–2005, but at a considerably slower rate (INEGI, 2007). Thus, the lower rate of

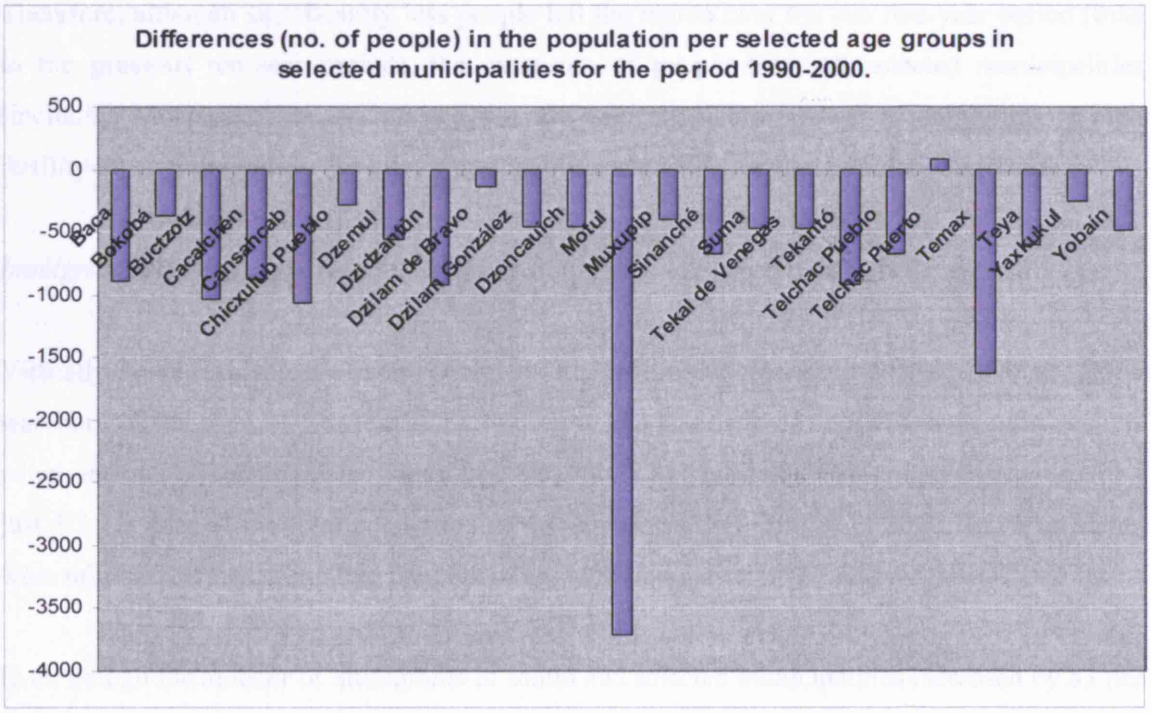
migration in the last five years, is consistent with the overall population growth of 4.7 per cent for the period 2000–2005, and could well respond to the impressive economic recovery experienced in the period 1990–2000.

Emigration by Age Groups, Motul and Surrounding Municipalities 1990–2000 and 2000–2005

When comparing population changes for (corresponding) age groups in the period 1990–2000, all municipalities — except one, Telchac Puerto — had less people per age group in 2000 (Figure 5.22). The comparisons included people who were 0 to 4 years of age in 1990 with people aged 10 to 14 in 2000, and 5 to 14, 15 to 34, 35 to 64 and over 65 in 1990 with their respective counterparts (in 2000). In other words, newborns for the period were not considered.

The population decrease (when excluding newborns) in almost all municipalities is consistent with the expected emigration flows since the henequen industry was finally liquidated in 1985. Mr. Castillo stressed that in Motul alone more than 50 per cent of the people have been leaving since the henequen crisis became acute in the 1970s.[47]

Figure 5.22: Total Population Changes Excluding Newborns for the Period 1990–2000, Motul and Selected Municipalities



Source: INEGI (2007)

[47] Interview with Mr. Castillo, municipal president of Motul in 1992.

Thus, practically all municipalities experienced a deficit in the number of people resident within their boundaries between 1990 and 2000 — when excluding newborns, that deficit totalled -17,227 people, that is 15.5 per cent of the total population of 1990 (INEGI, 2007). That population decrease was mostly due to emigrations since deaths are attributable mainly to the groups of people aged from 45 to 74 and over the age of 75, of which together accounted for a small share of the population (INEGI, 2007). Furthermore, the data suggest that emigration is more common among young Motuleños aged 15 to 24 years (INEGI categories include the 15 year olds in the same category with the 24 year olds), indicating that those who leave the region are within the age range of the 'most active' population and therefore that they (might) migrate in search of jobs.

However, the expulsion of people by age group over the period 2000–2005 showed a significant decreased to a total of 5,024 people, accounting for only 4.3 per cent of the total population in 2000 (INEGI 2007). Despite a net recovery with respect to the period 1990–2000, all municipalities (leaving aside Motul) expelled an average of 5.3 per cent of the total population, some municipalities expelling as much as 10 to 15 per cent, most expelling between four per cent and eight per cent (INEGI, 2007).

Therefore, although significantly less people left the region over the last five-year period (than in the previous ten-year period), the expulsion of people from all selected municipalities (including Motul) persists. As we will see, the total population growth is mainly due to high fertility rates. Immigration does not play a significant part in the total population growth.

Immigration to Motul and Selected Municipalities, 1990–2000 and 2000–2005

Virtually every resident of Greater Motul shortly before the censuses of 1990, 2000 and 2005 was born in the state of Yucatán. This finding is characteristic of deprived semi-rural regions where inflows of people are very rare. In 1990, only 1,257 residents were migrants, representing just 1.2 per cent of the total population in the region (INEGI, 2007). In 2000, 2,298 residents were migrants, representing two per cent of the total population in the region (INEGI, 2007).

Even though the number of immigrants in Motul and selected municipalities increased by 83 per cent, immigration to Motul and selected municipalities represented only 1.68 per cent of the total immigration in the state in 2000 (INEGI 2007). In 1990 immigration to Motul and selected municipalities represented 1.97 per cent of the total immigration to the state (INEGI, 2007).

Therefore, compared with the figures for total immigration into the state, the selected municipalities attracted a smaller share of the total immigrants in 2000 than in 1990. The ex-henequen municipalities might have only attracted a particular kind of immigrant: the circular migrant rather than the permanent immigrant found in Mérida.

Furthermore, in 2005, immigration decreased to 1,269 people, representing only 1.2 per cent of the total population in the region. The low immigration rates for the period 1990–2005 confirm that Motul and selected municipalities are very rarely an option for migrants. In contrast with the experience of most maquila cities, Motul and the surrounding municipalities have visibly been unable to attract workers from other parts of the state, the country or even Central America.

As it is often stated in the literature, the capacity of northern cities to attract migrants is due in part to the presence of the maquiladoras, but mostly because of their location near the border with the USA, from where most illegal migrants seek to cross the border (Young, 1986; Stoddard, 1987; Fatemi, 1990; Gilbert, 1992; Gilbert, 1994; Spalding, 1999; De la O, 2000). In this respect, Central American migrants have certainly not migrated to Yucatán in search of a job in the EMI. The (overestimated) pull factor that maquiladoras are said to exercise in the north of the country proves to be inexistent in the south, thus confirming that maquiladoras are rarely an option envisaged by potential migrants.

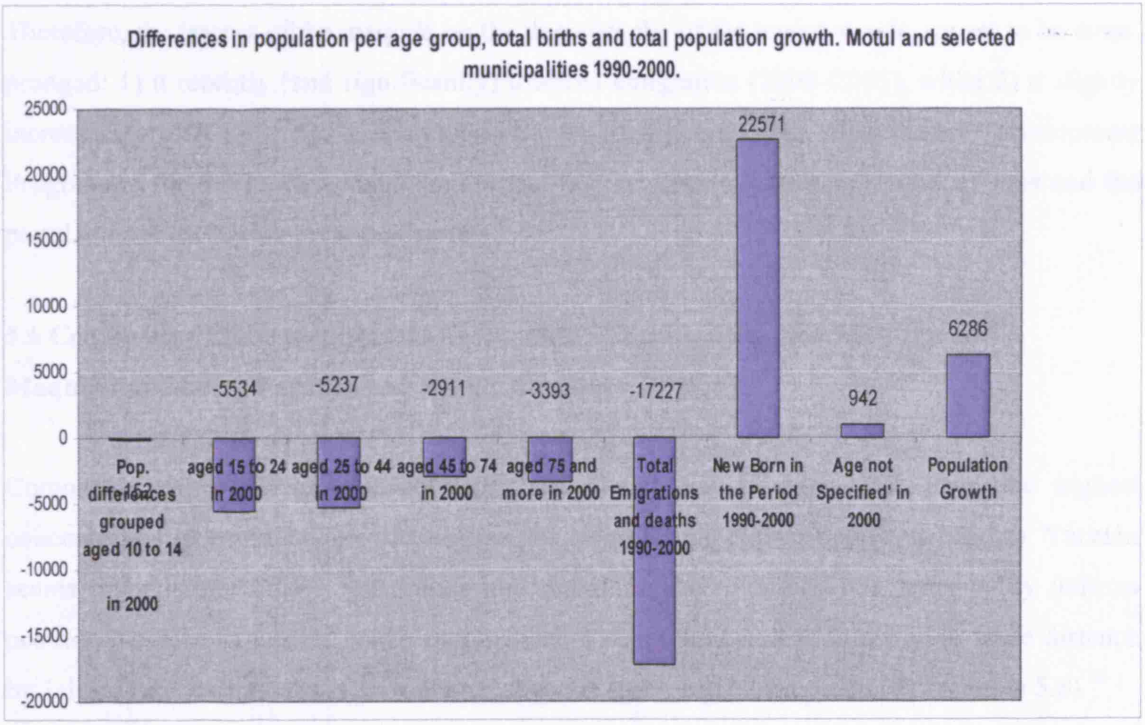
Fecundity Rates, Motul and Selected Municipalities, 1990–2000

Fecundity in the state of Yucatán is not high compared to the national average fecundity rate. The average number of 'living children' per mother was 3.9 in 1980, 3.8 in 1990 and 4 in 2000 (i.e. equal to the national average fecundity rate). Thus, the average fecundity rate for the period 1980–2000 was 3.9 children per mother (INEGI 2007).

Motul and the selected municipalities show a similar growth pattern, although with slightly higher average fecundity rates. The fecundity rate in 1990 was 4.3 and it was 4.5 in 2000 (there are no data on a municipal basis for the year 1980) (INEGI, 2004). Both figures are slightly above the state average. This is not surprising, since rural families usually have more children, a pattern that should be particularly common in the ex-henequen region. As will be shown in Chapter Seven, the households of Monty workers are clearly larger than the average household at state and regional level.

As mentioned earlier, 17,227 people left the region or died in the period 1990–2000. Around 22,571 new births, added to the 942 people that did not declare their age in the census of 2000, account for the growth of around 6,286 persons (Figure 5.23). The total population increase for the period 1990–2000 is therefore mainly explained by births (those who in the 2000 census came under the groups aged 0 to 4 and 5 to 9).

Figure 5.23: Net Population Balance: Newborns, Immigration, Emigration and Deaths, 1990–2000



Source: INEGI (2007)

In percentage terms, emigration and deaths for the period 1990–2000 accounted for a total deficit of -16 per cent of the total population of 1990, while the total population growth for the period reached 5.9 per cent. New births and those added under the label 'did not declare their age', therefore, represent the additional 22 per cent in relation to the total population censused in 1990, needed to attain a net growth rate of 5.9 per cent (-16%+22%=6%).

On the other hand, the 4.7 per cent rate in population growth for the period 2000–2005, seems to correspond mainly to a noticeable decrease in emigration (data from the *Conteo Nacional de Población y Vivienda* 2005 suggests that fecundity rates dropped to around 3 living children per mother in 2005) (INEGI, 2007). Emigration by age groups (for the periods 1990–2000 and

2000–2005) fell from 15.5 per cent of the total population of 1990 to 4.3 per cent of the total population of 2000 (INEGI, 2007). Thus, the 'rural maquila policy' may have had a positive impact in lowering emigration over the past five years, although no figures for the year 1980 were available to compare changes in emigration over a longer period of time. What one can say is that emigration from Motul and surrounding municipalities has significantly decreased over the last five year period, but it has not stopped.

As seen, Motul and surrounding municipalities have not attracted significant numbers of migrants, but rather they have continued to expel people. On the other hand, fertility rates remained above the state average and grew slightly over most of the period 1990-2005. Therefore, the impact of the maquila on the demography of the region would appear to be three-pronged: 1) it recently (and significantly) lowered emigration (2000–2005), while 2) it slightly increased fertility rates and 3) increased circular immigration. The Maquiladora Development Programme for the Ex-henequen Region has not attracted migrants in search of jobs and the population of the region grew moderately.

5.6 Contrasting Demographic and Economic Patterns among Northern Border Maquilador States, Yucatán and the Ex-henequen Region

Compared with some of the northern border and central states that have the highest concentration of maquiladoras (Chihuahua, Baja California, Nuevo León and Jalisco), Yucatán seems to be a more rural, indigenous and marginal state. For instance, marginality indexes position Yucatán as the 11th most marginalised state in the country, followed at some distance by Jalisco (25th), Chihuahua (26th), Baja California (30th) and Nuevo León (31st) (Table 5.8).[48]

Yucatán is significantly worse off in terms of education, the quality of its housing, average incomes and the number of people per house (marginality indexes are calculated by considering these variables) than Jalisco and northern border states. Indeed, northern border maquilador states are among the 'better off' in the country, together with Jalisco. According to CONAPO (2007) classifications, Yucatán has a **high** degree of marginality, while Jalisco and Chihuahua have **low** degrees of marginality and Baja California and Nuevo León, **very low** degrees of marginality (Table 5.8).

[48] Mexico is composed of 32 states, including Mexico City.

Table 5.8 Marginality Indexes and other Selected Indicators: Yucatán, Jalisco, Chihuahua, Baja California and Nuevo León, 1994, 2000 and 2006

	Marginality index 2000	Marginality degree 2001	Rank according to marginality degree 2000	Indigenous language speakers (thousands) (1994-2006)	Total population (thousands) (1994-2006)
Yucatan	0.4	high	11th	553.6	1,693.2
Jalisco	-0.8	low	25th	31.8	6,279.8
Chihuahua	-0.8	low	26th	87.9	3,036.5
Baja California	-1.3	very low	30th	34.1	2,403.2
Nuevo León	-1.4	very low	31st	18.1	3,880.8

Source: CONAPO (2007)
Note: The last two columns provide data from 1994 to 2006 and are average figures. These are not census data, but averages calculated using Conapo projections.

On the other hand, Yucatán (11th), Chiapas (1st), Tabasco (9th), Campeche (8th) and Veracruz (4th) are among the most marginalised and indigenous states (all located in the south) of the country — together constituting 'the marginal region of the south', often expelling people in search of jobs to medium-size and big cities (CONAPO, 2007). Compared with Jalisco (0.5 per cent) and the northern border states (1.4 per cent), Yucatán (32 per cent) has significantly more indigenous inhabitants and a significantly lower total population (see Table 5.9 for related figures).

Furthermore, the settlement patterns within the municipalities of Yucatán, Jalisco and the northern border states vary significantly. Yucatán has the highest percentage of rural population, followed by Jalisco and Chihuahua. On the other hand, Baja California and Nuevo León are amongst the most urban states in the country (Table 5.9).

Table 5.9: Urban and Rural Population and Migratory Balance: Yucatán, Jalisco, Chihuahua, Baja California and Nuevo León, 1994–2006

	Average 1994-2006	Average 1994-2006	Average 1994-2006
	% Urban population	% Rural population	Migratory balance
Yucatán	63.8	36.2	0.0
Jalisco	76.0	24.0	-33.1
Chihuahua	76.5	23.5	-10.2
Baja California	87.0	13.0	33.7
Nuevo León	91.6	8.4	5.2

Source: CONAPO (2007)
Note: All columns provide data from 1994 to 2006 and are average figures. The reason is that these are not census data, but Conapo projections.

According to these figures on migration patterns in Mexico, it appears that the migratory balance of the state of Yucatán is zero, showing that inflows of people are exactly equal to out-migrations (Table 5.9). On the other hand, the negative migratory balances in Jalisco and Chihuahua are related to migration to the USA, while Baja California and Nuevo León are net receivers of immigrants (CONAPO, 2007). The more complex migratory dynamic of Jalisco and the northern border states is related to their economic drive, their geographic position and their eminently urban/industrial character (CONAPO, 2007).

The border states and Jalisco tend to have a number of large (industrialised) and medium-size cities, forming part of the core urban network of the country (CONAPO, 2007) (Table 5.10). Guadalajara (Jalisco), Ciudad Juárez (Chihuahua), Tijuana (Baja California) and Monterrey (Nuevo León), together with Mexico City, are among the biggest, most industrialised and dynamic cities in the country.

Yucatán, on the other hand, has significantly more rural settlements than any other state, with few, small, medium or large cities (Table 5.10). In fact, Mérida has only recently become a big city and is only partially industrialised. That explains Yucatán's weak capacity to attract migrants other than to the capital city of Mérida, while — as mentioned before — all northern border maquilador states have a metropolis with more than one million inhabitants, extended over several municipalities, often states.

Table 5.10: Demographic Distribution by Settlement Size: Yucatán, Jalisco, Chihuahua, Baja California and Nuevo León, 2000

	No. of municipalities	No. of Metropolis (with more than one million inhabitants extended over several municipalities and/or states)	Big cities (with more than 100,000 and less than one million inhabitants)	Medium size cities (with between 50,000 and less than 100,000 inhabitants	Small cities (with between 15,000 and less than 50,000 inhabitants	Rural settlement-s (with between 2,500 and less than 15,000 inhabitants)	Rural settlement-s (with less than 2,500 inhabitants)
Yucatán	106	0	1	2	14	70	19
Jalisco	124	1	6	11	46	58	2
Chihuahua	67	1	4	1	16	38	7
Baja California	5	1	2	2	0	0	0
Nuevo León	51	1	6	4	9	24	7

Source: CONAPO (2007)

Consistent with all of these data, Yucatán is the state in which the population in the year 2000 had the highest proportion of local inhabitants, followed more closely by Jalisco and Chihuahua, and much more distantly by Nuevo León and Baja California (Table 5.11). The ex-henequen region is clearly the area most populated by local inhabitants (Table 5.11).

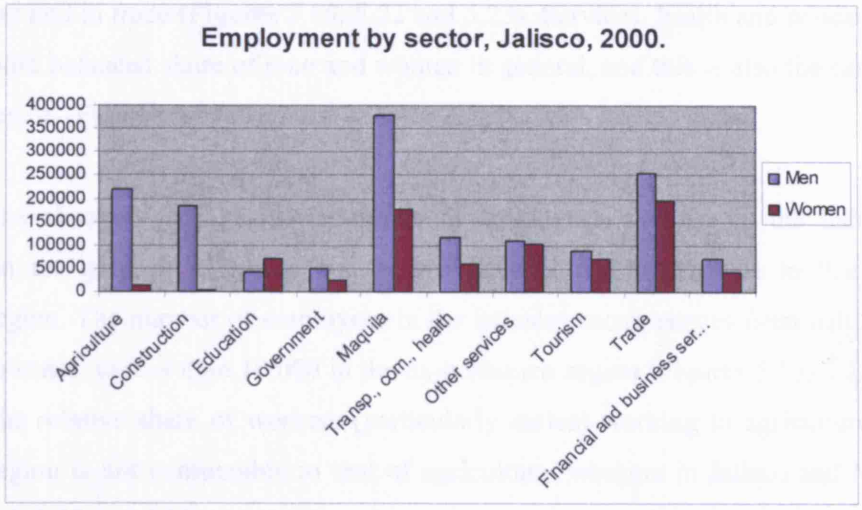
Table 5.11: Population by Origin (Local/Migrant Percentages). Yucatán (and Municipalities), and Other 'Maquilador' States, 2000

	Local	Migrant
Yucatán	92.2	6.8
Motul and Municipalities	98.0	2.0
Baja California	52.3	47.7
Chihuahua	80.7	19.3
Nuevo León	77.6	22.4
Jalisco	85.9	14.1

Source: CONAPO (2007) and INEGI (2007)

Furthermore, the distribution of the working population by sectors in the ex-henequen region differs strongly from that of the more industrialised and urban states of the north and Jalisco. Guadalajara (Jalisco) and Monterrey (Nuevo León) have been among the largest, most industrialised cities in Mexico for long time; a fact that is reflected in the share of the workforce employed in the industry sector (maquila in the figures) (Figures 5.24 and 5.25).

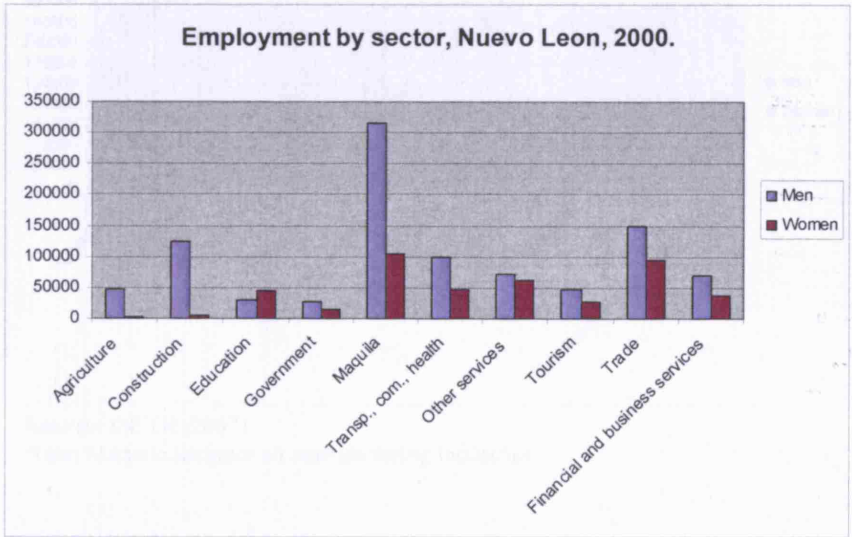
Figure 5.24: Absolute Employment by Sector, Jalisco, 2000



Source: INEGI (2007)
Note: Maquila includes all manufacturing industries.

INEGI data includes the maquila industry within the category 'manufacturing industries'. In the case of Guadalajara and Monterrey not all manufacturing industries are maquiladoras, but in Chihuahua and Baja California they are. Although the category in my graphs does not distinguish between maquiladoras and other manufacturing industries, the data reflect the urban/industrialised character of Jalisco and Monterrey, which is what I am interested in showing here.

Figure 5.25: Absolute Employment by Sector, Nuevo León, 2000



Source: INEGI (2007)
Note: Maquila includes all manufacturing industries.

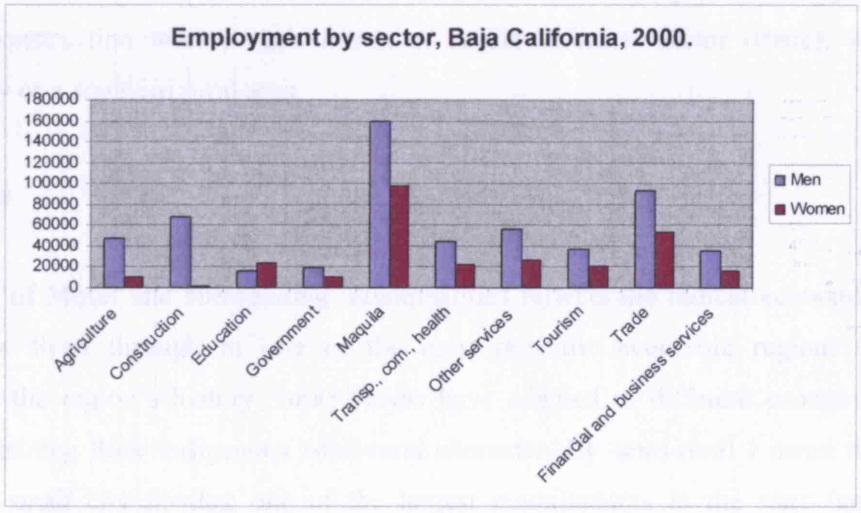
Trade is the second most important economic activity in terms of employment in both states, followed by financial services, agriculture and construction works (not necessarily in that order)

(Figures 5.24 and 5.25). As in the ex-henequen region, the largest share of women work at the maquiladoras and in trade (Figures 5.15, 5.22 and 5.23). Services, health and education seem to employ a more balanced share of men and women in general, and this is also the case in the ex-henequen region (Figures 5.15, 5.22 and 5.23).

However, the absolute (and relative) number of employees working in the industry sector (maquilas in the graphs) in Jalisco and Nuevo León is not comparable to that of the ex-henequen region. The number of employees in the industry sector ranges from half a million in the northern states, to less than 10,000 in the ex-henequen region (Figures 5.15, 5.22 and 5.23). Similarly, the relative share of workers (particularly males) working in agriculture in the ex-henequen region is not comparable to that of agricultural workers in Jalisco and Nuevo León (Figures 5.15, 5.22 and 5.23).

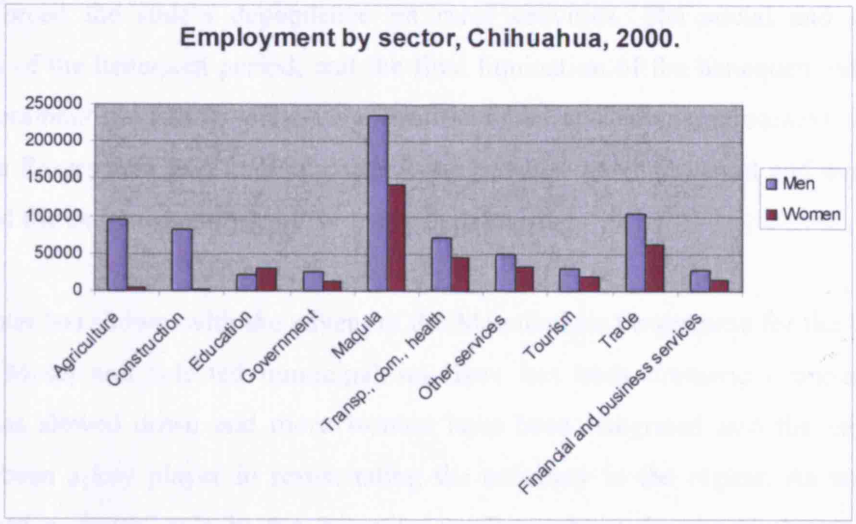
A very similar phenomenon is found in Baja California and Chihuahua, although on a smaller scale than in Jalisco and Nuevo León (Figures 5.26 and 5.27). The maquiladora industry in these states is even more dominant — in terms of the share of total employment — than in the previous ones, and agriculture seems to be less relevant (Figures 5.24 and 5.25).

Figure 5.26: Absolute Employment by Sector, Baja California, 2000



Source: INEGI (2007)
Note: Maquila includes all manufacturing industries.

Figure 5.27: Absolute Employment by Sector, Chihuahua, 2000



Source: INEGI (2007)
Note: Maquila includes all manufacturing industries.

Therefore, the ex-henequen region and the state of Yucatán are still eminently rural compared to the urban/industrial states of the north and Jalisco. More importantly, salaries and living standards differ, even if the distribution of employment by sectors, in all three cases, ranked the industry sector (which is mostly maquila in Yucatán, Chihuahua and Baja California), agriculture, trade and construction works among the most important. In fact, that distribution of employment reflects how the majority of Mexicans are employed in low paid activities (maquila, construction works, agriculture), or in the informal sector (trade), whether in a northern city or a southern rural area.

Conclusions

The history of Motul and surrounding municipalities reflects the radical economic shifts that people have lived through in one of the most dynamic economic regions of Yucatán. Throughout the region's history, rural Mayas have adapted to different economic 'models', while maintaining their indigenous semi-rural character. By semi-rural I mean that although Motul is a small city hosting one of the largest maquiladoras in the state (and henequen 'factories' in the past), it has not abandoned agriculture, nor been able to attract people, diversify and develop its economy as urban areas do. In fact Motul and the surrounding municipalities remain an indigenous populated area with relatively very little industrial and economic activity.

As we have seen, Yucatán's export-oriented economy based on henequen from the 1880s to the 1970s reinforced the state's dependence on rural activities. The social and demographic implications of the henequen period, and the final liquidation of the henequen industry by the federal government (in 1985), left a very specific social and economic context, in which the Maquiladora Programme was implemented. Rural poverty, unemployment and emigration had characterised the ex-henequen region for many decades.

As this chapter has shown, with the advent of the Maquiladora Programme for the Ex-henequen Region, in Motul and selected municipalities there has been dramatic economic progress, migration has slowed down and more women have been integrated into the labour market. Monty has been a key player in resuscitating the economy in the region. As we have seen, Monty played a central role in the Maquiladora Programme for the Ex-henequen Region, mainly because it is a very large, relatively old maquiladora, that is 'strategically' located.

On the other hand, the maquila has only recently been incorporated into the economy of Yucatán, and agriculture remains the most important source of employment, particularly for men. Perhaps the greatest contrast with the northern border states is the fact that Motul and surrounding municipalities have not attracted migrants, and cities in the state have not grown as fast or as large as the northern cities have. In fact, despite the demographic and economic recovery experienced in the area after the EMI was installed, the ex-henequen region has continued to expel people (for more than three decades now), showing very little demographic growth, and remained a land populated by local Mayas. Income in the state of Yucatán has also historically been amongst the lowest in the country, and other development indicators such as housing, education, infant mortality and labour opportunities have ranked Yucatán low for many years — as is the case in most southern Mexican states.

In opposition, the northern 'maquilador' states have been 'prospering' as no other region in the country has — although this is arguably thanks to the maquila industry. Northern cities have grown at impressive rates, particularly since the 1980s, and are (on average) among the most prosperous in Mexico. More working opportunities, better salaries, intense migration flows and urbanisation processes in northern states set them apart from those in the south, and more particularly from the ex-henequen region of Yucatán. Moreover, the proximity of northern maquila cities to the US border has had decisive economic, cultural, social and demographic implications that are seldom encountered in southern cities, let alone in the ex-henequen region.

Furthermore, the northern states do not have the same sense of history as found in Yucatán, and have never been populated by an Indian culture comparable to the Mayas. In fact, the northern cities have been among the biggest receptors of migrants in the country since the 1980s and their existence is very recent compared with Mérida and Motul. Perhaps, a review of the history of Motul, showing the impact of the Maquiladora Programme for the Ex-henequen Region and stressing the eminently semi-rural character of Motul and surrounding municipalities, will enable a more informed approach to the data on Monty workers.

Chapter Six

STUCTURE OF THE MONTY WORKFORCE

Introduction

The purpose of this chapter is to describe the basic characteristics of Monty workers and compare them with the findings of other research on maquiladoras and low-income workers. Characterising the rural maquila worker, on an individual basis, is a precondition to later understand the workers' family composition and structure, and more generally to explain Monty's social and economic impact in Motul and surrounding municipalities. Characterising the Monty labour force is essential to know more about Monty and more generally about the rural clothing maquiladoras.

As we have seen, Monty operates in a semi rural region, with a long agricultural and indigenous past. The fact that the Monty labour force only recently incorporated to maquila activities distinguishes Monty from the urban maquiladoras of the north; but in what ways precisely? Certainly Motul is not like Ciudad Juárez, Tijuana or Guadalajara, the most important and longest-established maquila cities in Mexico, but how different are maquila workers in the ex-henequen region from their counterparts in northern border cities?

The basic data examined in this chapter refer to the age, sex, civil status, education, place of birth and residence and turnover of workers, and the length of time that they work at Monty. Comparisons are made with Carrillo's (2001) samples of workers working in the clothing and electronic maquiladoras of Tijuana, mainly, and in a few cases with Fernández-Kelly's (1983) sample of Ciudad Juárez.

Selected characteristics of the workers (education) will also be compared with the average inhabitant of the region by using INEGI data at a regional level. The interviews with accountant Juan Mena and Mr. Luis Emir Castillo[1] will provide complementary and supporting evidence to aid an interpretation of questionnaire data.

[1] The manager at Monty in 2003, and the former municipal president of Motul when the Monty plant was installed in 1995, respectively.

6.1 Monty Workers' Age

All Monty workers in the sample were young. Production line workers were from 16 to 48 years of age, with an average age of 24.5. Eighty five per cent of the labour force is younger than 31 years of age, and the largest percentage of workers by age group covered those between 19 to 21 years (Table 6.1). Workers are very rarely over 33 years of age (table 6.1).

Table 6.1: Age Structure of the Monty Work Force

	All Monty Workers N=125		Women N=57	Men N=68
Age	%	Cumulative %	%	%
16 to 18	9.6	9.6	14.0	5.9
19 to 21	24.0	33.6	19.3	27.9
22 to 24	17.6	51.2	17.5	17.6
25 to 27	20.0	71.2	15.8	23.5
28 to 30	13.6	84.8	17.5	10.3
31 to 33	9.6	94.4	10.5	8.8
34 to 36	2.4	96.8	3.5	1.5
37 to 39	0.8	97.6	0.0	1.5
40 to 42	0.0	97.6	0.0	0.0
43 to 45	0.0	97.6	0.0	0.0
46 to 48*	0.8	98.4	1.8	0.0
49 to 51*	0.8	99.2	0.0	1.5
53 to 55*	0.8	100.0	0.0	1.5
Total	100.0		100.0	100.0

*Not assembly line workers

In more detail, the distribution of Monty workers by age group varied between men and women. The percentage of women aged between 16 and 18 is clearly higher than that of men (Table 6.1). On the other hand, men seem to be more numerous between the ages of 19 and 27, presumably because the bulk of the labour force at Monty is male and fall within this age range (Table 6.1). The most balanced share of men and women is found among workers aged between 22 and 24, suggesting that women work either when they are very young (16 to 18) or later (22 to 30s) (Table 6.1).

The interviews with Lic. Mena and Mr Castillo suggest that work at Monty was mainly promoted among younger people, and for that reason (as we will see, amongst several others) older workers were never incorporated into maquila employment. Monty only recruited workers aged from 18 to 23 at the beginning of their operations, perhaps sending the message that

maquila employment was addressed at a new generation of workers, more susceptible to adaptation to Monty's requirements.[2]

However, despite tight time schedules and high production quotas, Monty managers claim to implement an 'open' recruitment policy, strictly based on the capabilities and 'willingness' of the workers to fulfil the required quotas on time. In principle, Monty does not discriminate against workers on the basis of age, sex or, indeed, any other characteristic.[3] Lic. Mena explained that Monty workers are young simply because young people look for a job at Monty ('most between 19 and 21 years of age').[4]

Quite often, maquila recruiters argue that the only requirement in selecting workers is that workers complete their task on time, with the required quality and commitment to the company. 'Pregnancy and manual dexterity tests' to select workers seem to be issues of the past, only mentioned in the literature to contrast past (1970s–1980s) with present (1990s–2000s) maquila employment and management practices. As Lic. Mena emphasised, '(...) at Monty, we have never carried out pregnancy tests, we only focus on psychological and general health issues.'[5]

Nevertheless, Mr Castillo revealed that Monty had quite a different recruitment policy at the beginning of their operations in Motul. His version gives some insight into why mostly young people look for a job at Monty, and eventually why mature men and women self-exclude themselves from maquila employment. Mr Castillo had to keep records on the age and sex of Monty workers in order to evaluate the Programme for Employment, which was designed and implemented during his administration.[6]

Presumably, Mr Castillo had no interest in portraying Monty's recruitment policy in any particular way, for which reason his testimony is useful to put into perspective Lic. Mena's account. The manager at Monty might have made an effort to give an optimistic account and

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[2] This information was gathered in an interview with Mr. Luis Emir Castillo, who was municipal president of Motul at the time that Monty installed. The interview was carried at the Motul Technological School, of which Mr. Castillo was the director. Subsequent references to this interview will be referred to as: Interview with Mr. Castillo (2003).

[3] This information was gathered in an interview with accountant Juan Mena, which was carried out at the Monty offices. Subsequent references to this interview will be referred to as: Interview with Lic. Mena (2003).

[4] Op cit.

[5] Op cit.

[6] More detail is given below.

argued in favour of an 'un-biased', 'open' recruitment policy in order to give a more positive image of Monty and, ultimately, the whole sector.

When narrating the history of the installation of Monty in Motul, Mr Castillo noted, '(...) at the beginning, only workers aged between 18 and 23 were wanted. I learned that later Monty was willing to take workers up to the age of 29.'[7] In addition, Mr. Castillo informed us '[W]ith the maquiladoras young people started to work. (...). Part of the young workers' earnings was used to support the father's income, who in general was a small holder (because fathers, as 'heads of family', continued to work the land).'[8]

After all, the nature of maquila employment is very different from agricultural labour, which is still the sector that employs more people, notably (mature and older) men. Assembly line work, tight time schedules, minimum quota production, work under pressure and constant supervision are common at the maquiladoras, thus differing in many ways from agricultural activities. It is well known that for a long time very few men even sought a job in the EMI, and more particularly in a clothing maquiladora, mainly because maquila activities were associated with female work (and more particularly the clothing sector).

In a rural region like the ex-henequen region the distinction between male and female activities is, indeed, very clear, because indigenous societies have traditionally made a clear distinction between male and female responsibilities, with the more physical work in the *haciendas* was allocated to men and housework (often hard work as well) to women (de Teresa, 1992; Restall, 1997; Hervik, 1999; Castilla and Torres, 1999; Castilla, 2002; Gabbert, 2004; Kramer, 2005). Therefore, an older generation of (male) workers was unlikely to join maquila employment in the first instance.

As we will see, the adaptation of young (particularly male) Motuleños to factory work was not without problems, suggesting that the task of integrating more mature workers (usually smallholders and farmers), probably would have been even more difficult, if not impossible. However, both maquila and agricultural work are hard work and pay very low wages.

As Lic. Juan Mena specified, '[A] minimum quota production assures a worker a salary of two minimum wages, with the possibility of earning as much as four minimum wages depending on

[7] Interview with Mr. Castillo (2003).
[8] Op cit.

the worker's ability to produce more trousers.'[9] Working days at Monty can last up to ten hours, and travel distances to the plant can be as much as 50 kilometres, the equivalent of a 45 to 60 minute bus trip each day.[10] At least 50 per cent of the workers are known to travel such distances.[11] In addition, some workers do overtime to make more money.[12]

Perhaps more importantly, Monty, like most maquiladoras — and since maquila work began — does not offer pension schemes.[13] As in the EMI in general, incentives to workers at Monty and permanence at the plant are based on their capacity to meet production quotas.[14] The length of employment in the firm gives workers little assurance or few advantages.[15]

In addition, there are very limited scopes in the type of tasks performed by assembly line workers in the labour intensive maquiladoras, and differences in salaries (among assembly line workers) are minimal,[16] thus offering minimum possibilities of promotion (even for workers who have been employed for longer). Moreover, salaries at Monty seem to allow little possibility of saving (barely 11 per cent of the workers admitted to having some sort of savings scheme, 89 per cent declaring that they did not have any), and employment contracts do not assure workers' permanence for any specific period of time.[17]

Although Carrillo (1996) and Wilson (1996) insist that the modernisation of capital intensive maquiladoras has permitted workers to engage in more varied and less alienating tasks (while increasing salaries and extending the length of time that the average worker remains in post), maquiladoras still offer very few advantages for mature/older workers, which partially explains why young workers have been the norm in the EMI for more than 40 years (Young, 1986; Fleck, 2001; Carrillo and Santibañez, 2001). Despite the fact that maquila recruitment policies are not discriminatory in principle, maquila work is, indeed, extremely selective when it comes to age. In the case of Monty, the nature of the maquila employment seems to automatically exclude mature workers, most probably inducing them to 'self-exclusion' in the long run.

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[9] Interview to Lic. Mena (2003).
[10] Op cit.
[11] Op cit.
[12] Salaries were around US$60 a week in 2002, that is around 75 British pence an hour (at the exchange rate of October 2006: US$2 = £1). Production quotas are around 1 pair of jeans per hour per worker.
[13] Interview to Lic. Mena (2003).
[14] Op cit.
[15] Op cit.
[16] Op cit.
[17] Op cit.

It is therefore possible to conclude that mature workers at Monty are rare, principally because the competitive and dynamic nature of maquila work requires young people, and because the seemingly large pool of young workers found in Motul and surrounding municipalities satisfactorily supplies Monty's needs.

Carrillo (2001) reports that workers in the clothing and electronic maquiladoras of his sample in Tijuana (in 1991) had an average age of 24.4 and 22.4, respectively (Carrillo and Santibañez, 2001: 7). What is more, the age structure of Monty workers does not seem to differ much from the age structure of clothing maquila workers in Juárez since 1983. The share of workers per age group at Monty is strikingly similar to that of Fernández-Kelly (1983) and Carrillo's samples (1991) (Table 6.2). However, relatively more 'younger' workers (16 to 18) and fewer 'older' workers (28 and over) were found at Monty, compared with Fernández-Kelly's sample (Table 6.2).[18]

Table 6.2: Age Structure Comparisons of Monty Workers with Clothing Maquila Workers in Juárez and Tijuana (1983 and 1991)

	Fernandez-Kelly N=n.a.		Monty workers N=123	Carrillo N=1,324	
Age	All industries %	Clothing %	Clothing %	Age	Clothing %
16 to 18	21	4	10	14 to 20	41
19 to 21	25	14	24	21 to 25	27
22 to 24	18	18	18	26 to 30	15
25 to 27	20	27	20	31 to 66	17
28 to 30	7	14	14	n.a.	n.a.
Over 31	9	23	14	n.a.	n.a.
Total	100	100	100	n.a.	100

Source: Fernández-Kelly (1983: 50), Carrillo (2001: 30) and my sample. Only 'assembly line' workers were considered in all samples.

Regarding differences in the age of the workers by sexes, interviews suggest that young Motuleño women are sent to work earlier than men, particularly when more income is needed in the household and its young male members are still studying.[19] In addition, young Motuleño women seem to often rely on Monty to provide their first job.[20] Managers told me that young women know they have a good chance of being employed there and for that reason quite often look for a job at Monty before going anywhere else.[21]

[18] Carrillo's distribution by age groups made it difficult to make further comparisons.
[19] Interview with Mr. Castillo (2003).
[20] Interview with Lic. Mena (2003).
[21] Op cit.

In general, the literature indicates that in rural areas of Mexico, household heads often give preference in education to young men, while young women are expected to help in the house or work (usually at home) (Pagán and Sánchez, 2001). On the other hand, young Motuleño men seem to have more labour options, and generally look for a job at Monty only after having tried other jobs.[22]

As for the relatively high incidence of 'older' women in my sample, several authors have noted the simultaneous presence of young and older female workers in the clothing and electronic maquiladoras of the north, in all of its phases (Fernández-Kelly, 1983; Staudt, 1986; Warner, 1990; Kopinak, 1995; Cravey, 1997; Carrillo and Santibañez, 2001). Fleck (2001) noted more recently that the incorporation of 'married, divorced and separated women' (presumably 'older') to clothing maquila activities is rising. Coincidentally, most divorced and separated workers in the Monty sample were women.

6. 2 Gender of Monty Workers

Today, Monty is very unusual for a clothing maquiladora insofar as it employs many more men than women. Seventy per cent of the Monty workforce is men and 30 per cent women (Table 6.3). Male dominance has been typical of the plant except for a brief period of ten months during Monty's first year of operations. Why does Monty differ from the typical clothing maquiladora?

Table 6.3: Evolution in the Composition of the Workforce by Gender at Monty

Year	Length of time of Monty's operations (months)	No. of assembly line workers employed at Monty	Men		Women	
			%	No.	%	No.
1995	6 to 8	na	X	na	Y	na
1995	12	500 to 600	20	110	80	440
1996	18	2000	X	na	Y	na
2000	60	4,200	X	na	Y	na
2002	84	3,600	70	2,520	30	1080

Note: X>Y, but no precise numbers are available.

[22] Op cit.

6.2.1 The Evolution in the Share of Men and Women Working at Monty

During its first six to eight months of operation, Monty employed significantly more men than women, although no information was available on the precise ratio (of men to women), nor on the total number of employees (Table 6.3).[23] However, by the end of the first year, the company employed 500 to 600 workers, of whom 80 per cent were women and 20 per cent men (Table 6.3).[24] Although managers did not provide more detailed figures (on an annual basis and for the whole period 1995–2002), the information from interviews suggests that the ratio of men to women changed as Monty operations grew and developed.

According to Lic. Mena, the growth of the plant to incorporate 2,000 workers (after 18 months) was in part possible thanks to the significant incorporation of men to the Monty workforce (Table 6.3). Since then, men have outnumbered women by a significant proportion.[25] As the Monty plant continued to grow, it reached a peak of 4,200 employees in its fifth year (that is in 2000, see Table 6.3).[26] Nevertheless, after the US economic recession and harsh competition from China, Monty reduced its labour force to 3,600 workers[27] in 2002, of whom 70 per cent were men and 30 per cent were women (Table 6.3).[28] This distribution clearly differs from the pattern found in most clothing maquiladoras, resembling that in the border 'capital intensive' (automobile) maquila plants.

It is important to examine the changes in the ratio of men to women working at Monty. For instance, Fleck (2001) attributes the growing share of men working in the EMI to the '(...) ever increasing importance of the transportation equipment industry along the border and the dominance of apparel and textile production in the non-border maquiladora plants' (Fleck, 2001 147). Fleck explains the differences in earnings across sectors and the differences in maquila salaries between men and women as a result of the expansion of labour intensive activities in non-border regions: 'Food and apparel sectors have a smaller than average plant size, average to higher than average share of women and a higher than average share of employment in the non-border areas. All of these factors are expected to produce lower wages. These sectors are not only the lowest paid in the border regions, they are even poorly paid in non-border regions and

[23] Interview with Lic. Mena (2003).
[24] Op cit.
[25] Op cit.
[26] Op cit.
[27] Of which 3,200 are assembly line workers and 400 staff members.
[28] Interview with Lic. Mena (2003).

have a greater share of women employees. Apparel's dramatic growth since NAFTA has overwhelmed other non-border maquila production' (Fleck, 2001:149, 150).

On the other hand, Carrillo (2001) reports that in the clothing maquiladoras of Tijuana (in 1991) 45 per cent of the workers were men and 55 per cent women. Such a ratio of men to women reflects the actual ratio of men to women working in the EMI today (and in Yucatán), and perhaps more importantly, shows the growing incorporation of men into the clothing sector. In general, the closing gap in the ratio of men to women has been used as an argument to show the evolution of maquila activities and to make a case for how it has been to the benefit of Mexico's working class and economy. The data on the ratio of men to women and the evolution of the employment at Monty provide contrasting evidence.

In fact, the overwhelming presence of men at Monty might well show the adaptation of local Motuleños to maquila employment, in an attempt to preserve a male predominance in local employment. Given the traditional division of labour in the region, the work at Monty seems to add to the limited job supply that building works and agriculture currently offer to a growing working population.[29] INEGI data shows that the Motuleño labour force is mainly composed of men, in a strikingly similar proportion to the proportion of men working at Monty (73 per cent of the total labour force in the region in the year 2000 were men) (INEGI, 2007). It would seem that Monty, despite it being a clothing maquiladora, has become an important source of employment mainly for men. That would explain why Monty looks more like an automobile maquila rather than a clothing one.

However, let us first note that despite the relative retreat of women working at Monty, there are more women working at Monty today than there were at the time when most of the labour force was female. In fact, the female labour force seems to have doubled since Monty's first year of operations (Table 6.3). Around 960 women were employed at the time that this research was carried out (March 2003), compared to around 440 in 1995 (Table 6.3).[30] The interviews with Lic. Mena and Mr Castillo offer interesting insights as to why and how men became the dominant labour force at Monty.

[29] Interview with Mr Castillo (2003).
[30] Interview with Lic. Mena (2003).

6.2.2 Explaining the Evolution in the Composition of the Labour Force by Gender at Monty

The information gained from interviews suggest that the changes in the composition of the labour force by gender at Monty took effect as maquila work was gradually introduced and the Programme for Employment developed. The changes in the ratio of men to women reflect an effort on the part of the local municipality to favour male employment, which was regarded by Mr Castillo (and judging by the distribution of employment in the region in the year 2000, most probably by Motuleños in general) as the traditional, 'natural' labour force.[31]

Mr. Castillo explained that the long-standing dependence on henequen created a working culture that abruptly changed as the henequen industry finally collapsed. Henequen producers were organised under the *ejido* system, and men were usually those cultivating and working the fibre. Although the state of Yucatán developed tourism and Mérida's industrial parks successfully attracted foreign investors, the ex-henequen region did not have any 'alternative' source of employment until 1995. 'The only source of income around here came from henequen. Henequen was the only activity to which people [men] were devoted. We knew that the henequen had given what it had to give. We knew (when drawing up the campaign for the municipal presidency) that the creation of jobs was our first priority.'[32]

The collapse of the henequen industry meant an abrupt shift for the local economy. Men had to look for different types of jobs and, most importantly, had to migrate to find a source of income. 'The ex-henequen region was constantly expelling workers, some of whom came back after some time, others never returned. (The) henequen crisis forced sons of *ejidatarios* to become building workers. (...) I believe Motul is one of those municipalities where around 50 per cent of the population have left. Some came back, others adapted to other places. Many are in Cancún.'[33]

Men's work in the fields, and later in construction works, seems to have determined to a great extent the municipality's view on gender segregation at work. When asked why more men were initially encouraged to work at Monty, Mr Castillo argued that: '(...) the women of Motul were not used to working. It was usually the men who worked. Women worked at home, as domestic

[31] Interview with Mr. Castillo (2003).
[32] Op cit.
[33] Op cit.

servants or, very occasionally, in shops.'[34] Women were regarded as 'caregivers' and rarely as 'extra income earners' for their household.[35]

Furthermore, Mr Castillo described the promotion of the Programme for Employment, as follows: 'We [the municipality] did the promotion counting on the infrastructure and organisation of the municipality. We have a tight organisation in Motul. Through our '*comisarios*', chiefs of blocks and chiefs of streets we handed out leaflets. First, we invited 'key' people and met with them. We explained to them what maquila work was about and we spoke about Monty's labour requirements and the type of workers that Monty needed. We somehow 'trained' those key actors in society, to get them to promote maquila employment, to make them, in turn, invite people to work at Monty.'[36]

The nature of the Programme for Employment was accurately described by Mr. Castillo: 'We made the commitment with Monty to train workers on the condition that they employed at least 70 per cent of the workers trained. Actually, workers were trained on site at the plant, performing the work that they were later going to be assigned to do. The training was work in itself, except that we [the municipality] paid the workers for two months. We used the financial resources of the Programme to pay them. It was a sort of scholarship.'[37]

As one would expect, the fact that significantly more men were initially encouraged to 'train' did not go unnoticed by Monty managers. Mr Castillo commented that: '(...) Monty managers used to tell us about an unusual phenomenon in the plant they had in Motul. Contrary to what happened in other plants (that Monty had in other countries), the share of female employees was lower than that occupied by men.'[38]

However, despite the government's efforts, the male labour force of Motul did not respond as was initially expected. Desertions, absenteeism, alcoholism and a different working culture challenged the whole maquila project as the local government had conceived it. Mr. Castillo acknowledged that the problems with the male labour force were linked to the workers' customs and traditions: '(...) we had problems during the first eight months, later things went better, but, yes, there were problems. (...) many workers deserted, arrived at work late or did not go to

[34] Op cit.
[35] Op cit.
[36] Op cit.
[37] Op cit.
[38] Op cit.

work at all, particularly on Mondays, after Sunday parties took place.[39] People were not used to maquila employment. (...). The working culture was different. Building workers do not usually work on Mondays, because they celebrate on Sundays. We gradually had to change that culture, always taking into account the suggestions made by the managers at Monty. (...) Monty managers used to tell us that the most responsible workers were women, but that in Motul, the majority of those sent to train were men.'[40]

Thus, the difficulties in adaptation experienced with male Motuleños explain Monty managers' temporary 'preference' for women. Lic. Mena told us that the integration of more women signified stability for Monty, and quickly added: 'I believe it took around six to eight months for us to operate in a more stable way.'[41] Mr. Castillo went further and detailed Monty's recruitment policy at the time: 'More women joined when the perceptions of the locals towards Monty changed, when people thought maquila employment could work and knew that current female workers were doing well. (...). Monty was hiring more young, single, females at that particular time. Managers sent out a questionnaire asking female candidates if they were single (...). It was a big change, since only men used to work in those days. Now, two or three young family members work at Monty.' [42]

It was not until Monty managers were able to count on a more reliable male workforce that the employment of men regained pace and they eventually became the majority of workers. The re-incorporation of men resulted from Monty's major growth to incorporate 2,000 employees. Lic. Mena specified that demand for labour continued to grow since their clients were pleased with their work and demanded more jeans.[43] 'We initially sought to employ people from the city of Motul and nearby settlements (...). Our demand for workers kept on growing and intensified due to high turnover rates. As our demand for workers grew, men started to respond better to our working conditions. We continued to expand until we had 2,000 employees, just 18 months after we started out. As we grew, we had to look for people from further and further a field. We had not considered that prospect before. We had to adapt to the local conditions.'[44]

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[39] The custom of celebrating on Sundays seems to be related to the 'luneros' activities described in the previous chapter.
[40] Interview with Mr. Castillo (2003).
[41] Interview with Lic. Mena (2003).
[42] Interview with Mr. Castillo (2003).
[43] Interview with Lic. Mena (2003).
[44] Op cit.

Furthermore, Mr. Castillo emphasised that the initial indiscipline of the male workforce obliged the municipality to re-adapt their Programme for Employment. At no point did the Programme favour or encourage female work, despite the fact that Monty managers were clearly happier with the women's performance, and consequently hired more women for some time. As Mr. Castillo stated, '(...) we started to campaign against alcoholism. Alcoholism seemed to be the root of the problem. The problem still exists, but at that time we banned parties and celebrations on Sundays. This measure helped us to gradually change the working culture and was implemented on the advice of Monty's manager. These days, celebrations take place on Fridays. What this taught us is that work changes habits.'[45]

Therefore, the history of the evolution of employment at Monty was mostly determined by Monty's labour requirements but also by the Motuleño male working culture and notably by the local government's employment policy. However, how might one interpret the evolution in employment at Monty, the changing ratio of men to women and the Programme for Employment?

It is my view that the local government and managers at Monty understood that the future of Monty relied mainly on male participation. After all, local practice dictated that men assumed the role of principal income earners, thus determining many social aspects of Motuleño life. Given that Monty grew faster and larger than its managers had expected, incorporating more men would seem to have been a sensible goal, particularly if Monty was to be able to rely on a vast and stable labour force in the long run.[46]

The increasing demand for workers and high turnovers forced Monty managers to broaden their strategies to attract more workers. The local governments' efforts to integrate more men into maquila activities seem to have been a strong signal that Monty managers did not ignore. As we have seen, the local governments' Programme for Employment was part of a strategic policy designed by state and local officials, aiming to curb migration and unemployment. It is likely that the Monty managers believed that the local government's experience in drawing policy was worth trusting, particularly after their manifest efforts to assure the convenient infrastructure for Monty's operations.

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[45] Op cit.
[46] As we will see in the section on turnover, married men seem to be the more stable labour force.

I should emphasise that there seems to be no reason to believe that the integration of women to the labour market was discouraged in any way, or even perceived as undesirable. Rather, the — 'perceived' or 'real' — limited availability of single women seems to have encouraged the local government to push for a greater integration of men. After all, turnovers remained high even when more 'responsible' women were employed.[47] In other words, if Monty wanted to develop on such a scale and in such a short period of time, the managers had to consider local practice by implementing gradual changes in the local working culture, rather than attempting to force a radical change in women's role in the labour market.

After all, had they challenged social dynamics and values they could have triggered other kinds of problems and confrontations, which perhaps would have been even more difficult to resolve. The negative outcomes envisaged by the government might have included persistent unemployment amongst men, migration, social disintegration, exploitation of women or simply a negative reaction (from the men) towards female employment.

Let us not forget that some of these problems were highlighted in the case of northern border maquiladoras in the 1980s, thus characterising the maquila 'industry' for quite some time, and setting the agenda for discussions in the field (Fernández-Kelly, 1983; Kopinak, 1995; Cravey, 1997; Wilson, 2002). It was to this purpose that the Maquiladora Programme for Yucatán expressly intended to avoid the most negative aspects of the massive development of the EMI in northern states.[48]

Furthermore, given the rapid growth of Monty's operations in Yucatán and eventually the installation of many other clothing maquiladoras all over the ex-henequen region, the approach taken by the government of Motul seems to have yielded positive results and perhaps established precedents elsewhere. As shown in the previous chapter, the integration of women to the labour market through maquila employment in the region has been outstanding after all.

Thus, both data and interviews suggest that: 1) the actual ratio of men to women working at Monty is the result of the Motuleños' adaptation to factory work and of a deliberate policy on the part of the local government to encourage male employment; and 2) the economic context of the region and issues associated with gender and work and the male working culture are the origin of the local government's policy to encourage male employment.

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[47] Interview with Lic. Mena (2003).
[48] Interview with Mr. Jorge Torre (2003).

6.2.3 Gender and Work Tasks at Monty

At Monty men and women do different kinds of work. It is principally men who do the cutting and who become supervisors, while the women are more likely to work in tailoring, although a lot of men also work in tailoring. Work in the laundry appears to be performed by both men and women (Table 6.5).

Table 6.4: Tasks of Monty Assembly Line Workers

Task at Monty	% Monty workers total population N=3200	% Monty workers sample N=75
Tailoring	48	61
After care	27	12
Laundry (undying included)	18	16
Cutting	7	11
Total	100	100

Source: Accountant Mena (2003)
Note: 16 per cent (around 20 workers) of the workers missing from the Monty sample performed tasks not directly associated with the production of jeans.

It is important to note, though, that certain activities seem to be over-represented in my sample while others are under-represented.[49] The bias in the sample choice for my survey tended to over-represent activities such as security, packing, maintenance and computer systems (most of which are performed by men) to the detriment of activities directly related to the production of jeans (notably 'after care') (see note in Table 6.4). Most of the activities over-represented in the sample were performed by men, and accounted for 16 per cent of the people in the sample.

Despite such a bias, most of the core activities carried by Monty workers were fairly represented (Table 6.4). According to data provided by Monty managers, the workers performing tailoring activities were the most numerous (as were Monty workers in the sample), followed by 'after care' (a task seriously under-represented and mostly performed by men in the sample), 'laundering' (the task that shows the most balanced number of men and women in the sample, and that is fairly represented) and 'cutting' (a task mainly performed by men and that is also fairly represented) (Table 6.4).

[49] It is important to note, though, that around 28 workers did not answer this question.

In more detail, the sample data show that women perform fewer types of activities than men, with the majority working in tailoring, some in laundering or in undying [50] clothes (a sub-activity of the laundering processes) (Table 6.5). A small proportion of women performed other types of activities such as 'cutting', 'after care', 'packing' or 'security' (four per cent in total) (Table 6.5).

Table 6.5: The Tasks Performed by Monty Workers by Gender

Task performed at Monty N=99	% Female	% Male	% Total
Tailoring	33.3	14.1	47.0
After care	1.0	8.1	9.0
Laundry	5.1	7.1	12.0
Cutting	1.0	7.1	8.0
Cleaning	0.0	1.0	1.0
Computer system	0.0	1.0	1.0
Maintenance	0.0	1.0	1.0
Packing	1.0	1.0	2.0
Security	1.0	3.0	4.0
Supervision	0.0	6.1	6.0
Undying	2.0	6.1	8.0
Total	44.4	55.6	100.0

On the other hand, men performed a more varied set of activities, in part because they were more numerous, but also because of an apparent tendency to allocate men better paid positions and 'male associated' jobs (usually work requiring physical strength, technical knowledge or work implying hazardous activities). Although most men worked as tailors, in laundering and undying — thus, filling the most common positions required by the nature of clothing maquila activities — activities such as 'after care' and cutting the clothes were far more common among men than among women in the sample (Table 6.5).

Notably, six per cent of the men had supervisory positions, while no women performed supervisory roles. With regard to this, the literature on the subject notes that few women are engaged in administrative and better paid positions, particularly when both men and women work in the same place and men are more numerous than women (Chant, 1991; Fleck, 2001: 156), a phenomenon that does not appear uncommon at Monty. Perhaps understandably in such a context, only men were dedicated to packing, maintenance and office work (computer systems).

[50] 'Undying' or otherwise 'sandblasting' is the process by which jeans are given a lighter blue colour and the appearance of being used, through friction applied to the cloth with pumice stone.

Moreover, the fact that female Monty workers are mainly allocated to tailoring the jeans is consistent with the view (commonly found in Mexico) that certain tasks should be assigned to women, while others should be assigned to men (Fernández-Kelly, 1983; Chant, 1991; Kopinak, 1995; Cunningham, 2001; Wilson, 2002). Monty managers seem to have 'acknowledged' the prejudices associated with gender roles in the workplace, thus concentrating more women in tailoring activities in order to keep operations running as smoothly as possible and so as not to upset gender associated views on employment. After all, the women of Motul have traditionally made works of embroidery (Castilla, 2002) (see appendix p. 387).

Alternatively or complementary to this, the fact that women are concentrated in tailoring activities might also respond to a management strategy intending to make workers feel as comfortable as possible. As Chant (1991) pointed out, in many cases Mexican managers found it difficult to promote a proper working environment in which women are not sexually harassed by men, particularly when men were more numerous in the work place. The concentration of women in 'tailoring' activities — even if some men work as tailors —[51] could, therefore, respond to a deliberate strategy of separating men from women, while assigning each group tasks associated with their respective gender role.

6.3 Civil Status of Monty Workers

A slight majority of the Monty workers sampled were single (52 per cent) and most of the rest were married (45 per cent). The average age of single workers was 22, while the average age of married workers was 27. Because of their youth there were relatively few widows or widowers, or even divorced people. Similarly, very few workers were either separated or living as a couple (Table 6.6).

[51] Separating men from women even when both perform tailoring activities remains a possibility.

Table 6.6: Civil Status and Gender of Monty Workers

		Male and female Monty workers N=125	Female Monty workers N=58	Male Monty workers N=67
Civil status	Single	52.0	60.3	44.8
	Married	44.8	34.5	53.7
	Divorced	1.6	1.7	1.5
	Widow (er)	0.8	1.7	0.0
	Separated	0.8	1.7	0.0
Total		100.0	100.0	100.0

Note: Workers in a consensual union were included among the married (4 cases).

Quite importantly, 64 per cent of all the married workers in the sample were men, while only 36 per cent were women. The single population was more evenly distributed between genders, although single women slightly predominated. Fifty four per cent of the single workers were women and 46 per cent were men. Most divorced, widowed or separated workers in the sample were women, which is consistent with the idea that 'formally married, divorced and separated women' work at the maquilas (Fleck, 2001:158).

The abundance of single workers at Monty should come as no surprise. Despite the evolution of maquila activities, the maquila industry still employs mostly young, single workers (Fleck, 2001: 135). Carrillo (2001) finds, in his sample of Tijuana workers, that 65 per cent of the workers in clothing maquiladoras were single and only 34 per cent married (Carrillo, 1991: 31). That proportion barely changed among workers in the electronics sector who were 69.5 per cent single and 29 per cent married (Carrillo, 1991: 31). However, the proportion of married and single workers in Fernández-Kelly's (1983) sample of clothing maquila workers in Juárez was strikingly similar to that of Monty workers. Fifty four per cent of the workers in her sample were single and 46 per cent married — although around 80 percent of the total workforce were women (Fernández-Kelly, 1983:52).

The slight predominance of young single workers in my sample (and the EMI in general) can be explained by the necessity of families to have as many income earners as possible. Moreover, the (seemingly) relatively simple task of acquiring a job at Monty might also be an important factor.[52] On the other hand, the significant predominance of married men confirms the traditional division of labour in the region and suggests that married men usually perform as breadwinners. The larger proportion of married workers at Monty compared with Carrillo's

[52] Interview with Mr. Castillo (2003).

(2001) samples, and the fact that married workers are mostly men, could be a defining characteristic of the rural maquila and perhaps the most important 'oddity' at Monty.

More generally, the concentration of single workers among the women and the more balanced presence of single and married men seems to be typical of (rural and urban) Mexican labour markets (Pagán and Sánchez, 2001), but not necessarily of the maquiladoras. However, it is not clear if the share of married female Monty workers has changed during the period 1995–2002 as Monty's activities developed. For that reason, it is not possible (at this point) to conclude whether or not the Motuleños' attitudes towards (married) female employment are changing, and if they are, in which direction.

As seen earlier, the data suggest that, in fact, the overall number of women has doubled during the period. Thus, very possibly more married women work at Monty today than in 1995, as is said to be happening in the clothing maquiladoras of the north (Fleck, 2001).

6.4 Education

6.4.1 The Education of Monty Workers

Monty workers clearly had a better education than many inhabitants of the state and the region, more usually finishing primary and secondary education, but most notably high school (Table 6.7). All Monty workers have had at least a few years of formal primary education, most of them having finished primary and secondary school, fewer accomplishing high school levels (Table 6.7).

Table 6.7: Education Levels of Monty Workers as a Percentage of Local and State Inhabitants Aged 15 and Older

	% State N=1,103,497	% Motul and municipalities N=75,032	% MW N=126
No schooling	11.0	15.1	0.0
Did not complete primary	21.9	21.4	8.8
Primary	25.6	33.1	36.0
Secondary or similar (technical studies)	22.8	19.4	32.0
High school (or equivalent studies)	8.2	5.9	20.8
Tech higher studies	9.5	4.1	2.4
ns	1.0	1.0	0.0
Total	100.0	100.0	100.0

Source: INEGI (2000)

Monty workers seem to also be more educated than maquila workers in Tijuana. In Carrillo's sample, 44 per cent of the workers (in the clothing sector) had finished primary school, 45 per cent secondary level education and only eight per cent had finished high school (Carrillo and Santibañez, 2001: 11).[53]

Nevertheless, the female Monty workers in the sample were less educated than male Monty workers. Most women, stop studying after finishing primary education, fewer women than men, finishing secondary levels, only 15 per cent finishing high school (Table 6.8). Almost twice as many women than men did not finish primary school (Table 6.8).

[53] The level of education of Monty workers education comes into even sharper contrast when compared with Fernandez-Kelly's (1983) sample, in which eight per cent of the workers (clothing) had not finished primary school, whilst 59 per cent did not go beyond primary education and 33 per cent had 'incomplete secondary', 'secondary' or incomplete 'high school' (Fernández-Kelly, 1983 52)

Table 6.8: Level of Education and Gender of Monty Workers

	% Men N=63	% Women N=53
Incomplete primary	6.3	11.4
Primary	25.4	45.3
Secondary	38.1	26.4
High school	27.0	15.1
Commercial diploma	3.2	1.9
	100.0	100.0

Mr. Castillo explained the differences in education between men and women, as follows: '(...) when the economy is down, pupils are no longer sent to school because they have to work. Women are the first to be sacrificed. Men continue to study, but women have to do something else.'[54] Consistent with Mr. Castillo's account, the literature indicates that rural women are taken out of school earlier than men, to follow a home based education or work at home (Katz and Correia, 2001). The greater investment in the education of the boys and men is explained by the fact that men are expected to become principal income earners for their household — and thus are expected to get the best job possible.

Such a discrepancy between sexes is particularly common among indigenous people and is explained by the segregation with regards to household roles according to gender, household headship and family responsibilities (Chant, 1991; Townsend, 1999; Cunningham, 2001; Gabbert, 2004). It is said that such preconceptions are understood as an early form of gender segregation that later limits female insertion into the labour market and/or confines women to the low-skilled jobs associated with feminine tasks, thus hindering them from the possibility of mapping out a professional career for themselves (Chant, 1991; Townsend, 1999; Cunningham, 2001; Pagán and Sánchez, 2001). Furthermore, giving priority to the education of males reflects the expectations of parents (fathers?) that they will give their sons the opportunity to get better jobs.

On the other hand, the fact that relatively well educated people from Motul engage in maquila work allows us to view maquila salaries from a different perspective. Several authors point out that maquila workers are often underpaid, because workers are not trained or have very low levels of education (Carrillo, 1989; Barajas, 1989; Trejo, 1989; Fatemi, 1990; Wilson, 1996). It is also said that managers intentionally disregard workers' education levels and justify salaries

[54] Op cit.

only on the basis of the tasks performed at the plant (Fernández-Kelly, 1983; Sklair, 1993; Kopinak, 1995; Cravey, 1997; Cooney, 2001; Wilson, 2002).

Thus, contrary to the claims of maquila supporters (Carrillo, 1989; Wilson, 1996; Fleck, 2001; Rivera and Maldonado, 2004), in this case clothing maquila workers (that is workers in labour intensive maquiladoras) are not necessarily among the least educated workers. Moreover, the prospect of maquila employment for more educated (low income) Motuleños, begs the question: To what extent is investment in education a good investment? Little hope of achieving a salary beyond that of a building worker hardly justifies more years of study.

Fernández-Kelly (1983) insisted that maquila employers generally selected their workers from among the most educated people who applied for a job in the maquiladoras (in that case, women). Managers often stated that the more educated workers were more reliable, responsible and able to learn new tasks; a view shared by different authors in more recent works (Chrispin, 1990; Kopinak, 1995; Wilson, 1996; Fleck, 2001; Ramírez, 2001; Wilson, 2002; Castilla, 2002; Rivera and Maldonado, 2004).

In addition, as more capital-intensive maquiladoras developed, these are seen to require more skilled male workers, and thus recruit the most capable candidates to be suitably trained (Kopinak, 1995; Fleck, 2001; Wilson, 2002; Rivera and Maldonado, 2004).[55] Although Lic. Mena did not make any specific comment on Monty's recruitment policy with regards to the levels of education of potential workers, it is reasonable to believe that state government officials may have chosen to install the first clothing maquiladora of the ex-henequen region in Motul due to its 'respectable' standards of education (among other reasons).

6.4.2 The Importance of Education in Motul: Explaining the Higher Level of Education of Monty Workers

In terms of educational standards Motul is a very peculiar municipality of the state of Yucatán. Felipe Carrillo Puerto, the most important left-wing leader and the intellectual who liberated the Indian Mayans from slavery by promoting land reform among henequen workers in the 1920s, was born in Motul. Hence, schooling seems to be of particular importance to the municipality and the state.

[55] Monty is by no means a capital-intensive maquiladora, although it uses state of the art technology and 'Just in Time' production processes, thus operating under technological and modern productive conditions with respect to the clothing maquiladoras of the early days (Interview, Lic. Mena, 2002).

Motul is proud to have given birth to one of the most widely recognised political activists in the state and to the first (probably only) governor to give his inaugural speech in the Mayan language. Schools and public squares throughout the state of Yucatán bear his name. In fact, the official name of Motul is 'Motul of Carrillo Puerto'. The fact that it is Carrillo Puerto's place of birth seems to explain the promotion of the city as an education centre for the region and thus, probably, the relatively high education standards of Monty workers.

Mr. Castillo explained that in Motul '(...) the education cycle can be fully completed, from kindergarten to higher education. Students can complete the whole cycle without leaving Motul. Only students seeking options other than careers in administration and computing systems have to go to Mérida. (...) In addition, the Technological Institute [only recently opened] offers vocational careers, such as industrial engineering, computer engineering and technical training (...).'[56]

When asked if people from other municipalities and communities came to study in Motul, Mr. Castillo replied: 'Just as the maquiladora (located here) attracts people from many other municipalities, so too do we have people from other municipalities come and study in Motul.'[57] Thus, although the education levels of Motuleños are above the state average, Motul is an education centre that gives education opportunities at all levels, particularly for inhabitants of rural municipalities. Monty workers' high levels of education exemplify this well. More generally, it appears that maquila employment is attracting some of the most educated low-income workers in the region, demonstrating the limited job opportunities that the regional economy is currently able to provide.

6.5 Origin of Monty Workers

Very few Monty workers are migrants. Few have come from other Mexican states (two per cent) or even from nearby municipalities (seven per cent). Unlike the case of some maquila workers along the northern border (Carrillo and Santibañez, 2001: 37, 38), most Monty workers were born in or close to Motul.[58] This is not surprising, given that rural areas in Mexico are

[56] Interview to Mr. Castillo (2003).
[57] Op cit.
[58] Carrillo reported that 77 per cent of the workers in his sample of clothing and electronic maquiladoras were migrants (Carrillo and Santibañez, 2001 37, 38). Similarly, Fernández-Kelly (1983) reported that 73 per cent of the clothing maquila workers she surveyed were not born in Ciudad Juárez (27 per cent did), and that 62 per cent were born outside the state (only 38 were born in Chihuahua) (Fernández-Kelly, 1983 58).

known to expel rather than attract people. As shown in the previous chapter, very few inhabitants were born outside the state or the region.

Rural municipalities have (by definition) less than 15,000 inhabitants, while small towns, like Motul, have between 15,000 and 100,000 inhabitants (CONAPO, 2006).[59] In more detail, 63 per cent of the Monty workers in the sample came from a rural community, while 37 per cent lived in Motul. However, Lic. Mena informed me that half of the total number of workers in the plant came from Motul and the rest from municipalities within 50 kilometres of the plant.[60] Thus, Monty workers are local/regional workers who live near the factory or commute every day, using Monty's (free) transport system.

The fact that Monty workers are local/regional workers could have wider implications that will be examined as part of the analysis of the 'sustainability' of the EMI in the ex-henequen region. For the moment, it is enough simply to acknowledge that the fact that Monty grew to such an impressive size proves that the selection of Monty's location was a wise choice. Monty located in a strategically positioned small town to attract workers from a relatively large region, which is exactly what it did. Monty remains an important source of employment for local/regional workers, with very positive economic and demographic implications for the region.

6.6 Turnover at Monty

6.6.1 Time Working at the Plant

According to Lic. Mena most workers stayed with Monty for between three and four years. The sample data supports his claim. Monty workers in the sample had been working at Monty for an average of 3.2 years in average. However, the data reveal that there were also a large group of workers (of both sexes) that had worked at Monty for almost five years on average, while the rest had been working (at the time of the survey) for between three months and one and a half years (Table 6.9).[61] There may well have been a bias in the sample choice made by Monty managers towards workers with a longer history at the plant.

[59] Municipalities hosting Monty workers had, on average, around 950 households, while Motul is home to around 7,000.
[60] Interview with Lic. Mena (2003).
[61] Interview with Lic. Mena (2003).

Table 6.9: Length of Employment of Monty Workers by Time Periods and Gender

Length of employment (years)	N	Mean length of employment (years)	% Men	% Women
X<1	22	0.25	54.5	45.5
1<X<3	27	1.5	44.4	55.6
X>3	75	4.8	58.7	41.3

Note: X=length of employment at Monty.

The sample data on the length of permanence is only indicative, since only those workers employed by Monty at that time were considered in the sample. Although the interview data suggest that Monty workers' entry into and exit from the plant varies according to age and gender, no specific figures were provided by Lic. Mena.[62] Nevertheless, several of the workers present in the first sample (carried at Monty) had already quit by the time they were later visited at home, most of them single and among the group of workers who had not worked at Monty for more than one year (around ten cases overall).

Single Monty workers were said to be the more volatile population, more particularly male single workers, followed by single women. Lic. Mena explained: 'It is easy for young single men to leave work and try their luck in Cancún or as builders (...). Women quit when they get married and have children; others are not permitted to work by their husbands (...). These are the principal reasons for our turnover. On the contrary, married men are a more stable population.'[63]

Indeed, although the average length of permanence at Monty is very similar for men and women, married Monty workers seemed to have been working for one more year (on average) than single workers (Table 6.10).

[62] Op cit.
[63] Op cit.

Table 6.10: Length of Employment of Workers at Monty, Grouped According to Gender and Civil Status

Gender		N	Minimum	Maximum	Mean	Std. Deviation
Women	Time at Monty	56	0	8.0	3.2	2.4
Men	Time at Monty	68	0	8.5	3.3	2.3
Civil status						
Single	Time at Monty	63	0	8.0	2.8	2.1
Married	Time at Monty	51	0	8.5	3.9	2.6

Such a difference could be due to the younger age of single workers, but as Lic. Mena explained, 'maturity' and gender are important factors that determine the length of employment of workers at Monty. 'Many single men leave when they can earn more money in the short run. But, they do not get other benefits, such as seniority in the plant, social security... so; they exchange these benefits for more money in the short term. We believe that such behaviour has to do with their young age, that is, with immaturity. In contrast, married workers are more responsible, they stay longer.'[64]

Similarly, the head of human resources at the Monty plant in Hunucmá (Lic. Netembi) commented to me that the plant was about to close, mainly because single workers (of both sexes) were undisciplined and not sufficiently committed to work.[65] Carrillo (2001) finds that marital status is a significant factor in explaining turnover, confirming that married workers tend to stay longer in the same plant (Carrillo and Santibañez, 2001).

Data confirms that married male Monty workers have stayed longer at the plant thus far, followed by married females (Table 6.11). Single male Monty workers seemed to have stayed around one year less than single female Monty workers (Table 6.11). Although the data are only indicative, and for that reason should be treated with caution, the differences in average lengths of permanence according to gender and civil status match Lic. Mena's observations and Carrillo's findings.

[64] Op cit.
[65] Lic. Netembi was interviewed in April 2003 in the port of Progreso in a casual meeting that was not recorded.

Table 6.11: Monty Workers' Length of Employment at Monty, by Civil Status and Gender

Civil Status	gender		N	Minimum	Maximum	Mean	Std. Deviation
Single	women	Time at Monty	34	0	8	3.2	2.2
	men	Time at Monty	29	0	8	2.4	1.9
Married	women	Time at Monty	17	0	8	3.7	2.8
	men	Time at Monty	34	0.16	8.5	4.0	2.5

Furthermore, married Monty workers seem to be the population that 'pulls' the average length of permanence of the whole labour force, therefore 'masking' the shorter time in post of the more volatile population of single workers. Higher permanence amongst married male Monty workers is consistent with the idea that men perform as 'breadwinners' after they marry (Figure 6.11).

On the other hand, the greater rates of permanence among single women (as compared to single men), suggests that single females value working at Monty more highly than single men, and thus, 'stay a little longer than single men'.[66] One plausible explanation is that single women have less mobility within the labour market than single men (which is why they value working at Monty more highly), a suggestion that was partially confirmed by Lic. Mena's account — and by the distribution of the employment by sexes in the region shown in the previous Chapter.[67]

6.6.2 Turnover Data

The turnover at Monty for the year 2000 was 64 per cent, and was said to be significantly higher in previous years.[68] However, Lic. Mena proudly reported that turnover was dramatically reduced in the subsequent year, reaching 'only' 32 per cent (per year) in 2001.[69]

Surprisingly, the rotation of personnel at Monty was not considered high by Lic. Mena, considering (he noted) that the maquila industry has historically registered high turnover rates, particularly clothing maquiladoras. Supporting Lic. Mena's claim, Carrillo (1991) and Fernández-Kelly (1983) report that turnovers in the clothing and electronic maquiladoras of

[66] Interview with Lic. Mena (2003).
[67] Op cit.
[68] Op cit.
[69] Op cit.

Tijuana and Ciudad Juárez stand at around 100 per cent per annum (Fernández-Kelly, 1983; Carrillo and Santibañez, 2001: 14).[70]

However, it seems to have taken time to reach a stable situation, and turnover has only recently been controlled and (apparently) dramatically reduced by 50 per cent in the space of one year.[71] Such a remarkable adaptation on the part of Motuleños to maquila employment in recent times is consistent with Labrecque's (2005) findings. Considering previous data, I can conclude that the workers with the highest turnover are: 1) single males who get an alternative job; followed by 2) single females who get married or have children; then, with a significantly lower turnover; 3) married women (as we shall see relatively 'older' women with 'older' children); and 4) married men.

The most frequently recurring explanation found in the literature for the high turnover rates is that maquila work is hard work, demanding both psychological and physical strength. Similarly, Monty workers mentioned several times that working at Monty 'was tiring' and that eventually workers 'can not take it any longer' and quit. Lic. Mena explained that one of the main reasons for the high turnover was that workers get 'fed-up' and so look for an alternative job, some (the youngest) going back to work at Monty after some time elsewhere.[72]

In addition, — as in the EMI in general — trade unions are not allowed at Monty, minimising worker's rights, bargaining power and job security. The contracts of Monty workers are negotiated personally and allow the employer to hire and fire at will without any financial obligation.[73] Lic. Mena suggested that the high rotation of personnel was mainly due to workers' voluntary resignations, rather than to a decision on the part of the managers to cut personnel (say older workers), let alone due to the firing of workers who have been employed at Monty for longer.

Apart from periods of economic contraction, when Monty reduces its labour force (e.g. in the year 2001 Monty fired around 500 employees — 12 per cent of the total labour force — due to economic recession in the USA), most of the time, Monty managers are more concerned with filling the positions left by (young) workers who quit voluntarily — a phenomenon that is also

[70] In the worst cases reaching 35% a month (see more detailed figures in Chapter Three, p. 126).
[71] Op cit.
[72] Interview to Lic. Mena (2003).
[73] Op cit.

common in the maquiladoras of Tijuana and Juárez (Fernández-Kelly, 1983; Carrillo and Santibañez, 2001).[74]

Although Monty's impressive growth could certainly in part explain its high turnover rates, the turnover data for the clothing sector, and ultimately the IME as a whole, suggest that high turnovers are an intrinsic part of the maquiladoras' operational systems. In fact, the relatively lower turnover rates at Monty might be another oddity that could be explained by 1) the even scarcer employment opportunities found in the ex-henequen region, compared with northern border cities; 2) the relative abundance of low income households in the ex-henequen region; and 3) household composition and structure of the Monty workers.

6.6.3 How might one Interpret High Turnover Rates?

It should first be said that the high turnovers at Monty, and in the EMI in general, prove the dissatisfaction of maquila workers and the low quality of jobs that the maquiladoras still provide. Quite significantly, although turnover was dramatically reduced, the size of Monty supposes that a considerable amount of workers are 'coming in' and 'going out' of Monty every year (around 1,100 workers in 2001).

For a region with scarce employment opportunities and moderate population growth, high turnover is not necessarily a negative thing. A high rotation of personnel implies a wider distribution of labour and income within a limited number of households — of course, putting aside the reasons for such a high turnover and assuming that the nature of maquila activities will not change substantially for some time.

Unemployment is less destabilising if one considers that single, extra income-earners are those who 'rotate' more, and that they eventually leave Monty will. Thus, more families can benefit from maquila employment than if Monty had lower turnover rates and, more importantly, Motuleños can look for a job at Monty — or quit — according to household needs.

Although Monty reacts to economic contractions in the US economy by firing workers (Lic. Mena's full quotation is given below), Monty seems to be a relatively stable and reliable source of labour.[75] Monty's size and position in the world market allowed it to grow and cope with

[74] Op cit.
[75] Op cit.

high turnover by employing workers from ever more distant municipalities (even if that meant that the firm incurred transport costs). Thus, Monty's success is partially explained by the extensive labour pool found in the region.

Furthermore, the fact that 'workers who had previously quit are taken back,'[76] sharply contrasts with the intransigent management practices of the clothing maquiladoras of the north, reported in the early literature; but mostly proves that Monty constantly needs workers. Carrillo (1991) describes how maquila employers in Tijuana find it increasingly difficult to control turnover, in part because the supply of maquila jobs for some time exceeded the demand (Carrillo and Santibañez, 2001: 22). In addition, maquila jobs are said to be cyclical and temporary for a significant number of workers (Carrillo and Santibañez, 2001: 22).

Thus, it is not unreasonable to expect that clothing maquiladoras in Tijuana and Juárez might also have relaxed their recruitment policies with respect to the 1980s and that they now operate in a similar fashion to Monty. That is, workers who eventually quit might be taken back without much problem.

6.7 Expectations of Monty Workers

6.7.1 Expectations about Staying at Monty

On the one hand, the majority of Monty workers are uncertain about how long they will work in the factory (Table 6.12). On the other hand, almost a third expressed their intention to stay at Monty 'as long as I can' (Table 6.12). The idea that married men are the more stable working population is reinforced by the fact that twice as many married men expressed their intention to work at Monty 'as long as I can' as married women (Table 6.12). Married men also proved to be more numerous than single workers to express such an intention (Table 6.12).

[76] Op cit.

Table 6.12: Expectations of Monty Workers with regard to their Future at Monty

	% Single and married	% Married		% Single	
For how long do you plan to stay at Monty? N=110		Male	Female	Male	Female
Does not know	51.5	17.5	4.9	11.7	17.5
As long as I can	32.0	11.7	5.8	6.8	7.8
More than one year	5.8	1.9	1.0	1.9	1.0
One year	4.9	0.0	1.0	2.9	1.0
Less than one year	5.8	1.9	0.0	1.0	1.9

On the other hand, the share of single and married female Monty workers expressing that they would stay 'as long as I can' was much more balanced (Table 6.12). What all these suggest is that (overall) work at Monty seems to be more 'needed' by married men, followed by single and married women, and lastly by single men (Table 6.12). Such a hierarchy is consistent with Lic. Mena's accounts of turnover and data on the length of time that workers stay at Monty, and presumably with the male oriented work market found in the ex-henequen region.

As Mauricio Dzul, a local Motuleño who worked with me while visiting Monty workers, commented: 'an uncertainty about permanence is presumably due to the fear of being fired',[77] but also perhaps because workers do not seem to be used to having a single, stable job for long time (a characteristic of rural workers). Most importantly, workers presumably do not know how long they will stay at Monty because 'working at Monty is hard work.'[78]

The fear of being fired seems to be justified, since periods when a lot of workers are laid off are not uncommon.[79] As Lic. Mena clearly stated: '(...) our activities are related to the American economy. If the US economy does not perform well, we have less work. The past two years have been very difficult. The war [in Afghanistan] and other international conflicts [terrorism] have impacted on the American economy, and by extension our production quotas. If American consumers are confident, demand for jeans grows, which is good for us. On the contrary, if American consumers are not confident, our production immediately falls. When that happens we have to cut personnel.'[80]

[77] Interview with Mauricio Dzul, whilst travelling through the comisarias and municipalities of Motul.
[78] Op cit.
[79] Op cit
[80] Interview with Lic. Mena (2003).

Higher expectations among single women (as compared to single men) (Table 6.12) could be mostly explained by the fact that women's labour options in Motul are, indeed, very scarce, and thus, they place more value on working at Monty. In relation to married women, the greater expectations of longevity among single female Monty workers (Table 6.12) might respond to the fact that single women know they will most probably work until they marry ('until I can'); but also, simply to the fact that they are younger and have been working for less years than married women.

On the other hand, six per cent of Monty workers in the sample revealed that they intended to work at Monty for more than a year (as we will see, probably meaning 'less than two years') (Table 6.12). This suggests that few workers (married/single, male/female) rely on Monty on a 'mid-term' basis, knowing that they will eventually quit in between one to two years. Similarly, around 10.5 per cent of the Monty workers expressed that they intended to work at Monty for at most one year (Table 6.12). This more volatile share of workers was evenly distributed between sexes and civil statuses; although any married women in the sample declared she expected to work for less than a year.

Thus, a not so conservative and quite varied (in terms of sex and civil status) 16.5 per cent of Monty workers in the sample seem to see Monty as a 'medium-term' or 'temporary job', clearly knowing that they will not work at Monty for more than a year or two. As Lic. Mena pointed out, there seems to be a one-year threshold that determines which workers will stay for longer periods of time. 'We have two critical periods to know if workers are staying. One is after three months; the other is after one year. Workers who stay for more than a year generally stay until they get fed up, but they generally stay for two years, some more.'[81]

All these suggest that the workers' adaptation to Monty depend mainly on the age and civil statuses of the workers, but also (as we will see in the next chapter) on the household's economic conditions, composition and structure. Carrillo (2001) noted that there were cyclical patterns that seemed to govern when maquila workers in Tijuana enter and leave maquila work. The months prior to Christmas celebrations are usually more stable, while workers tend to quit during the first months after New Year's Eve.

[81] Op cit.

6.7.2 Expectations of Promotion among Monty Workers

Significantly more single than married women stated that they believed they had the possibility of being promoted (Table 6.13). However, married and single men were the most optimistic groups (Table 6.13). Such differences in expectations between the sexes reflect well the presumed differences in employment opportunities for men and women in the region.

Table 6.13 Expectations of Promotion among Monty Workers

Do you believe that you have a chance of been promoted?	% Women		% Men	
	Single N=30	Married N=12	Single N=23	Married N=28
Yes	49.9	24.8	56.6	64.4
No	33.5	66.7	34.8	32.2
Do not know	16.7	8.5	8.9	3.7
Total	100	100	100	100

The increased expectations among married men with regard to promotion seem to be related to greater expectations with regard to their length of permanence at the plant. More generally, the greater expectations of promotion among the men seem to be related to the allocation of tasks between sexes, and thus to the possibility of promotion within a wider range of activities. Married male Monty workers seem to be those more likely to 'develop a career' at Monty, since unlike women, men are not constrained by marriage and childbearing cycles and are presumably considered to be the main income earners.

Single men's expectations of promotion seem to respond to their confidence in the possibility of making a career at Monty — if they want to, but presumably also to the fact that they are part of the more 'educated' population at the plant. Single male Monty workers seem to be aware that Monty is one of a few working options, unlike single women who might see Monty as their sole employment opportunity. Thus, single women's expectations of promotion could be related to the fact that they value working at Monty and plan to stay 'as long as they can'. The greater expectations of promotion among single women (compared to married female workers) may also be explained by the younger age of single women, which enhances the possibility of their making a career at Monty.

Significantly less expectations of promotion among married female Monty workers, suggest that the hope of promotion is not the reason that motivates them to keep working at Monty, perhaps

knowing that they have little chance of competing with married men, ultimately, younger, single women. Childbearing and rearing periods might 'cut' females' accumulated experience at the plant, thus hindering promotion opportunities relative to men.

6.8 Monty Workers' Parental Condition

Most married male Monty workers had children (68 per cent), while fewer married female Monty workers did (56 per cent). More generally, male Monty workers with children were more common than female Monty workers with children (Table 6.14). Furthermore, significantly more male Monty workers in the sample had a 'small' child (children) that 'did not yet go to school', than female Monty workers (Table 6.14).

Table 6.14: Monty Workers with or without Children by Gender

Monty workers N=125			Men N=68			Women N=57		
Without children	With children	With small children	Without children	With children	With small children	Without children	With children	With small children
59.2	31.2	9.6	50.0	38.2	11.8	70.2	22.8	7.0

Note: 'Small' children are considered to be those children 'not old enough to be going to school'.

Such findings support the idea that, unlike men, women enter and leave Monty according to reproductive and childcare cycles. Overall, less than ten per cent of Monty workers had 'small' children (Table 6.14). Carrillo (1991) found that only 12 per cent of the total number of workers in the clothing maquiladoras of Tijuana had at least one child under the age of six (Carrillo, 1991: 32). Moreover, 66 per cent had no children at all and 22 per cent had at least one child older than six (Carrillo, 1991: 32). Thus, more Monty workers seem to be parents than the workers at the maquildoras in Tijuana, but they also seem to have less 'small' children.

Since the share of Monty workers with 'small' children is too small, it seems pertinent to look at interview data on the availability of nurseries in Motul. When asked about the facilities the local government actually provided to promote female employment, Mr. Castillo commented that the municipal government had planned to build nurseries before Monty installed, and that they had actually built two (which I did not visit).[82] However, he said that he did not know to what extent those nurseries were used by Monty workers. When asked for a second time if he knew whether female Monty workers actually used nursery services of any kind (either provided by the

[82] Interview with Mr. Castillo (2003).

municipality or the plant itself), Mr. Castillo evaded the question and replied that he understood that Monty managers had a special arrangement with their employees.[83]

In my view, what Mr. Castillo meant was that few women actually use municipal nursery services (Monty does not provide them), otherwise he most probably would have emphasised their functionality. The reason why few women use nursery services might be that female employment is a recent phenomenon, and women are not used to leaving their children in a nursery, but instead leave them at home or with relatives — a pattern known to be common among low income households, particularly rural ones (Townsend, 1999; Cunningham, 2001; Pagán and Sánchez, 2001). Questionnaire data did not provide more evidence on the topic.

However, consistent with the above assumption, Carrillo (2001) notes that 78 per cent of clothing maquila workers in Tijuana leave their children at home, with only five per cent using nursery services and 16 per cent relying on family or friends (Carrillo and Santibañez, 2001: 33). In addition, Lic. Mena confirmed that high turnover is partially explained by the drop out rates of recently married women and of those women who are about to have a child.[84]

Although the limited number of cases of Monty workers with 'small' children impedes any definitive conclusions, previous findings suggest that Motuleño women have only recently begun to engage in work 'outside home'. Hence, the recent integration of married females to the labour market might suppose that the female's role as 'caregiver' rarely allows women with 'small' children (or babies) to work outside the home.

Moreover, the women with 'small' children working at Monty are significantly older than the average worker (27.5 years old on average). Their 'older' age might imply a more advanced stage in the family life cycle, meaning that they may have help from other family members (older daughters/sons) to take care of the children.

6.9 Why did Monty Workers who worked before entering Monty quit their previous job?

Monty workers cited 'low wages' as the principal reason to quit their previous job, followed by 'difficult working conditions', the 'temporary character of the job' or issues related to 'caregivers' responsibilities' (Table 6.15). Interestingly, only seven per cent mentioned

[83] Op cit.
[84] Interview with Lic. Mena (2003).

transport costs as a relevant issue, and only five per cent the fact that they were studying (Table 6.15).

6.15 Reasons Given by Monty Workers to Explain Why they Quit their Previous Employment

Monty workers N=76	%
Low wages	26.9
Time schedule, working conditions	16.7
Work finished	11.5
Marriage/pregnancy/needed to take care of child	10.3
Went to work at Monty	9.0
Distance issues (costs, time, hard conditions)	7.7
Other	9.0
Studies	5.1
Got fired/had problems	3.8
Total	100

In Carrillo's study of Tijuana, most workers (56.8 per cent) responded that 'personal issues' (not 'salary') were the principal reason why they quit their previous job, followed by location ('distance issues' or 'transport costs' in my table) (12.7 per cent), salaries (low wages) (11 per cent) and company policy (8.7 per cent) — a category not found in my sample (Carrillo and Santibañez, 2001: 77, 78). Perhaps these differences are an accurate reflection of the differences in the labour market opportunities found in Motul relative to the cities of the north and the fact that Monty subsidises transport for its workers.

Conclusions

As shown, the individual characteristics of Monty workers and Monty's operation system do not differ much from what has been written on the maquila workforce and the maquila industry both along the northern border and in the centre of the country. Monty seems to reproduce many of the most common negative aspects of this type of work pointed out in the early literature on the maquila to date.

In sum, Monty is like any other clothing maquiladora except for its large size and location. However, since Monty employs Motuleño workers, who were only very recently incorporated into factory work, the Monty workforce displays some very particular features that distinguish them from the workforce of the urban maquiladoras.

It seems to be Monty's location, rather than its working dynamics or employment policy that makes the difference. Perhaps the most decisive aspect of the Monty workforce is that Monty workers are native, regional workers in opposition to the migrant workforce of northern cities. In addition, the regional semi-rural character in which Monty operates certainly differs from the urban environment of northern and central maquila cities.

On the one hand, given the (typical) characteristics of the maquila workforce for the past 25 years, it comes as little surprise to find that the Monty workforce is composed of young workers (of both sexes). Monty, like most maquiladoras, does not employ older workers simply because the nature of maquila employment does not allow it to do so. Low wages, long journeys to work and tough work under pressure seem to suit young energetic workers rather than the more mature workers (in this case) used to cultivate the land or, eventually, work as builders. Furthermore, the limited opportunities for making a career, and the few advantages for workers that have remained longer at the plant, do not seem to stimulate workers to stay there for long. Thus, more than half of the Monty workforce happens to be young and single and seemingly indistinctively male or female.

However, more (young) married people work at Monty than in the northern clothing maquiladoras and, quite importantly, the married workers at Monty are usually men. In addition, most of the Monty workforce is male. These very atypical aspects of the Monty workforce seem to respond to the economic and social conditions found in the region before the Monty plant was installed, but also to a Motuleño patriarchal, male-oriented society, in which men are expected to work while women stay at home and do housework. The civil status of the workers by gender, the division of labour at the plant, differences in the length of time men and women work at Monty, differences in turnover by gender and the nature of the Programme for the Employment confirmed this observation.

In fact, the men in Monty perform what are believed to be more 'male tasks' — that is, tasks requiring some technical knowledge or expertise, or those incurring more risks or requiring physical strength. Men also act more often as supervisors and seem to have more possibilities of being promoted. In consequence, married men seem to be the most stable population at Monty.

Furthermore, men were encouraged and supported by the local government to work at Monty, because men were those usually working and acting as the main income earners for their households during the henequen era. The fact that for a short period of ten months single

women were a majority of the workforce only shows that the adaptation of the male labour force took some time, and that during that period Monty remained relatively small. The incorporation of significantly more men to the Monty workforce went hand-in-hand with Monty's impressive growth and could be seen as a success for the municipal employment policy.

Quite interestingly, the high turnovers and management practices at Monty seem to be very similar to those in the clothing and electronics maquiladoras of Tijuana and Juárez, although it is claimed that turnover at Monty is more controlled. Turnover at Monty, as in most maquiladoras, is mostly explained by the low salaries and the hard work that maquilas require. However, Monty's production cycle, which is related to the US economy, is another factor contributing to instability for the workers. Monty, like most maquiladoras, relies on a vast labour force of young single workers constantly rotating, and (in this case) on a more mature set of workers — usually married men — who are more stable and work for longer periods of time.

Single women seem to value working at Monty — and thus work there for longer than single men — presumably because the regional labour market does not offer them many options. However, single women and those who have recently married inevitably quit when they get married or have a child, thus raising turnover rates. On the other hand, single males have more labour options and, thus, are those who rotate more, usually to try out different jobs. Conversely, ('older') married female Monty workers seem to be among the most stable working population, but they usually only work at Monty after having raised children and for that reason are generally older than the average worker.

Hence, as in the clothing and electronic maquiladoras of Tijuana and Juárez, very few Monty workers had young children who were still nursing, despite the fact that a considerable share of Monty workers were married. At Monty most workers with young children were men, suggesting that family roles amongst Motuleños prevent married women from working outside the home when they have young children. This might perhaps explain why nursery services do not seem to be of widespread use among the female Monty workers (as is the case in Tijuana). Most female maquila workers with children seem to rely on family and/or friends to take care of their children.

Perhaps unexpectedly, Monty workers seem to be more educated than the average state or regional inhabitant, and more educated than maquila workers in Tijuana. One might wonder

whether investment in education is desirable if, after all, maquila employment is one of the most evident working options in the region. What remains to be seen is whether the household composition and structure of Monty workers are also similar to those of most maquila workers, and thus whether they share the characteristics of low-income urban households, and to what extent.

Monty's management practices, the economic context in which the Monty plant was installed and the local government policy are all elements that explain Monty's success, and notably the unusually large share of men working in a clothing maquiladora.

Chapter Seven

THE SOCIO ECONOMIC IMPACT OF MONTY

Introduction

To complete the analysis of the social and economic impact of Monty, this chapter will examine the households of Monty workers. The main intention is to show the family composition and structure of the workers. By showing with whom Monty workers live, who are the (main and extra) income earners and who takes the spending decisions in the household (headship), I will try to characterise the family dynamics of this group of workers. This should go some way towards clarifying why many more men than women work at Monty and why the Monty workforce is so young.

My analyses at the household level will also provide evidence on the willingness of the local labour force to take up clothing maquila employment, help to explain the high turnover rates at Monty and show the main socio-economic implications of maquila work in greater Motul. An understanding of Monty workers' household dynamics is important for several reasons. On the one hand, the literature notes that the household survival strategies among low income families have developed since the economic crisis of 1995 and, more particularly, since NAFTA was implemented (Cunningham, 2001; Chant, 2004; González de la Rocha, 2006). Simultaneously, female employment has increased among low income families in Mexico, though that increase is mainly an urban phenomenon (Chant, 1991; Gilbert, 1994; Katz and Correia, 2001; Chant, 2004). Female employment remains low in rural areas and is limited to trade and peripheral employment in the informal sector (Pagán and Sánchez, 2001).

To some, Mexico's 'integration' into the world economy (and the relative success of the NEM) is reflected in the increasing number of men (and notably married women) working in the maquila sector. For some, the incorporation of women into the maquila (and, more generally, into the Mexican labour market) responds to the need among low income households to send out to work as many income earners as possible in order to survive (Gilbert, 1994; Chant, 2004; González de la Rocha, 2006). My findings contest the theory that increasing female employment responds to a positive evolution in employment and to the 'opening' of Mexico's labour market. More generally, increasing maquila employment shows that a lack of job alternatives obliges low income families to rely heavily on the maquila to survive.

Moreover, the differences in employment patterns between rural and urban women are often explained in terms of differences in education, family composition, customs and traditions, and notably the degree of development of local labour markets (Chant, 1991; Cunningham, 2001; Pagán and Sánchez, 2001; González de la Rocha, 2006). Given that the ex-henequen region is still mainly rural, and that maquila employment in the region is relatively recent; it is important to investigate why married women work at Monty (in terms of their family composition) and explore further the extent and the type of work carried out by relatives of Monty workers.

This chapter also seeks to estimate the average total income of (single and married) Monty worker's households. INEGI data, interviews and other sources of information found in the literature will be used for this purpose. I will also analyse the quality of Monty workers' houses (construction materials, number of rooms, availability of water, electricity and other services) and the presence of consumer durables (particularly electro domestic appliances). I will also examine the opinions of Monty workers regarding factory work, safety measures and, more generally, their perceptions as to whether Monty has improved their lives and income.

In general, comparisons between the households of Monty workers, Non-MW and those in the state and the region will serve to highlight the particular household characteristics of Monty workers. My findings will also be compared with those from the literature on the maquiladoras (in particular), but also the literature on rural and urban employment, gender, and low income households.

The case of Monty can provide alternative evidence (on work and poverty in rural areas) to that of the World Bank's 2002 report on poverty in Mexico. The report notes: 'Rural poverty and inequality are comparatively high and did not experience long term progress during the 1992–2002 decade', despite the fact that non-farm activities and governmental aids were developed and put into place (World Bank, 2002).

Some basic questions arise. For instance, do maquila salaries provide a sufficient income for families with one sole income participant? Either way, how are these families composed and structured? To what extent has the inclusion of both men and women into the EMI signified an increment in worker's household living standards? After all, maquila real salaries remain low, and all indicates that scarce working opportunities are pushing growing numbers of workers to work at the maquiladoras. Does maquila employment in the ex-henequen region entail changes in family composition and structure?

An analysis of Monty workers' households will provide partial answers to these questions. To fully comprehend the data analysis, the reader should bear in mind two important aspects of the Monty workforce. First, that the majority of workers are men, which is a very unusual pattern particularly for a clothing maquiladora. And second, that arguably men are the majority in the factory because of the traditional division of labour in the region, rather than because of a discriminatory recruitment policy on the part of Monty managers.

7.1 Household Size

In 2000 the average household in greater Motul had 4.0 members; in the state and nationally the average household size was 4.2 (INEGI, 2006). Monty workers' households are usually larger than Non-MW households and larger than the average household in the region. Monty workers' households have an average of 5.4 family members, compared with an average of 4.9 household members among Non-MWs and 5.1 household members among maquila workers in Tijuana (Carrillo and Santibañez, 2001: 44).

Therefore, Monty workers' households are larger than most of the households in the state, the region and, most importantly, larger than Non-MW households in Motul. Moreover, Monty workers' households are similar in size to maquila workers' households in Tijuana, confirming that maquila employment is generally taken by members of 'larger' households.

The literature notes that low income households are often larger (usually extended), because large family structures permit a more efficient allocation of resources and, thus, may result from a household 'survival strategy' (Chant, 1991; Townsend, 1999; González de la Rocha, 2006). Furthermore, large families often have more members of working age or able to help with household tasks, therefore, either assuring a large enough household income to keep other potential workers at home, or allowing them to go out to work (notably married women) (Chant, 1991; Cunningham, 2001; Fleck, 2001; Pagán and Sánchez, 2001). Thus, 62 per cent of Monty workers lived in households of more than four people compared with 49 per cent of the interviewees in the control sample and 50 per cent of all families in the region (INEGI, 2007).

7.2 Household Type

Most Monty workers lived in a nuclear household or with their extended family and only two per cent lived alone (Table 7.1). No Monty worker lived with friends or co-workers (co-

residents) (Table 7.1). Similarly, most interviewees in the control sample (non-MW of Motul), inhabitants of the ex-henequen region and the state of Yucatán were also found to live in either nuclear or extended families, very few lived alone or shared a house with non-family members (Table 7.1).

Table 7.1: Households by Type: State of Yucatán (INEGI, 2000), Control and Monty Samples

Household Type	State N=387,573 per cent	Motul and municipalities N=26,830 per cent	Monty sample N=126 per cent	Control sample N=74 per cent
Extended families	23.3	21.9	39.7	18.9
Nuclear families	69.1	69.2	58.7	81.1
Single headed	7.6	8.7	1.6	0.0
Co-residents (with non-relatives)	0.4	0.2	0.0	0.0
Total	100.0	100.0	100.0	100.0

Source: INEGI (2006) and questionnaire data

In contrast, northern maquila workers were more often found to have lived alone or with friends or co-workers, particularly at the time when the maquila was developing fast in northern border cities (Fernández-Kelly, 1983; Cravey, 1997). However, according to Carrillo (2001), most maquila workers in the clothing and electronics maquiladoras of Juárez (in 1991) also lived in nuclear or extended families. Unfortunately Carrillo (2001) did not specify the percentages by family type for his sample. No more recent data are available on the household type of maquila workers.

Although most Monty workers live in nuclear families — and given the larger household size of Monty workers — a significantly larger proportion of Monty workers were found to live in an extended family than was found for the other samples (Table 7.1). As one might expect, the family structures of Monty workers, more often resemble the typical rural, large/extended family, than households without Monty workers (Table 7.2).

Moreover, families were considered nuclear when they were composed of a childless couple, a couple with children, or single adults living with their parents. If those families with adult (older than 19 years old) — but single — Monty workers were considered extended-nuclear

families, around 61 per cent of the Monty workers' households would have fallen into the category of extended family. However, considering single workers living with their parents as a nuclear families is useful for two reasons. First, immediate comparisons with INEGI statistics can be made — INEGI defines nuclear families on the same basis — and second, it is possible to distinguish between nuclear and extended families in relation to the civil status of the worker — when these still live with their parents.

Table 7.2: Families of Monty Workers and Non-MW by Size and Type

	Monty sample N=125			Control sample N=74			Motul and selected municipalities N=24,440		
	Family size			Family size			Family size		
Family type	Small per cent	Large per cent	Total per cent	Small per cent	Large per cent	Total per cent	Small per cent	Large per cent	Total per cent
Nuclear	33.6	26.4	60.0	47.3	33.8	81.1	41.7	34.3	76.0
Extended	4.0	36.0	40.0	4.1	14.9	18.9	8.0	16.0	24.0
Total	38.1	61.9	100.0	51.4	48.6	100	49.7	50.3	100.0

Note: A family is considered large when it has 4 or more household members.
Source: INEGI, 2006 and questionnaire data.

Consistent with the family size and type found for Monty workers' households, González de la Rocha (2006) and Chant (2001) affirms that low-income urban families are often large and extended. Thus, it is likely that a considerable proportion of maquila workers living in northern cities also live in large extended families and quite probably in extended-nuclear families, just like Monty workers.

7.2.1 What Can be Said About Low Income Families and State Development Policy in Rural Yucatán?

The information gleaned from interviews with development policy-makers in the state government indicate that for some time rural development policy in the ex-henequen region has been addressed at large families similar to those of Monty workers today.[1] The household type

[1] Interviews with Mr.Janitzio Durán (2003), 'Planning Director' at Sagarpa-Yucatán; Ing. David Loria (2002), 'Director of Infrastructure for Development' (Sagarpa-Yucatan) and Mr. Marcos Gutiérrez (2003), 'Analyses and Project Evaluation Director'.

and size of Monty workers seems to match the characteristics of the typical low income rural household found in the region, and thus the recipients of government aid.[2]

In addition to large family size, (as we will see) the presence of adult males still working in agriculture and raising livestock for family consumption would seem to confirm that Monty workers are members of the same families that used to work the henequen. The Programme for Employment seems to be an alternative (and/or a complement) to earlier poverty alleviation policies elaborated by the state government.[3] In fact, most families in the ex-henequen region were recipients of PROCAMPO aid (many still are), particularly once the henequen crisis became acute in the mid-1980s and up until the maquila Programme was implemented.[4] During my visit, PROCAMPO aid packages were explicitly contested by local officers of the PAN; although 'they [the new administration] still had to implement a similar version of it to help "old" *campesinos*'. More detail is given in Chapter Eight, which considers the state government's approach to a 'sustainable development policy'.

On receipt of annual money transfers, *campesinos* are expected to buy agricultural assets and invest in agricultural activities. During my visit, PROCAMPO aid was distributed in the municipality of Motul. Regional smallholders, usually mature or elderly men, patiently waited, lining up in several queues to receive around 3,500 pesos.[5] Salesmen displayed their agricultural products a few metres away from the entrance to the municipality building, also patiently waiting for a client. 'The money given away by the government barely ever ends in the fields. Most *campesinos* spend it on other necessities, such as paying debts, basic consumption expenses or alcohol. Such a policy has severe limitations.'[6]

As state government officers explained, successive attempts to promote large-scale agriculture and cattle ranching in what was formerly the henequen region failed, mainly because people were 'too used' to working the henequen.[7] They added that the land is not good quality either. However, small scale farming — 'an old family habit destined to alleviate some of the household necessities'— became more common as did raising livestock at home. Few

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2 Op cit.
3 The INEGI agro and cattle census of 1991 revealed that around 70 per cent of the men in the region, 'older than 12 and were in employment', worked in agriculture (INEGI, 2007).
4 Interview with Mr. Janitzio Durán (2003).
5 Around US$ 350 or £175 at an exchange rate of 20 pesos for each pound sterling.
6 Interview with Mr. Marco Gutiérrez (2003).
7 Op cit.

Motuleños successfully grow fruit and vegetables or produce honey for market sale (although these activities seem to be on the rise). Cattle ranching activities are also relatively limited.[8]

In 2002 the proclaimed goal established by state officers of SEDESOL implementing development policy in (mainly the southern regions of) Yucatán, was to help families to secure an income of at least two minimum salaries, through a policy of agricultural development.[9] The data indicate that a similar criterion may have been applied in drawing up the Maquiladora Programme for the Ex-henequen Region in the mid-1980s. Any government officer we spoke to mentioned an estimate (that may have been calculated by the local government) made to anticipate the economic impact of the maquiladoras on the household economy. However, interview data suggest that each Monty worker could at least participate with two minimum salaries.[10]

Nevertheless, given that workers at Monty — and in the EMI in general — seem to be temporary/cyclical workers, earnings from the maquila are limited over the long run, and therefore only seem to alleviate the income necessities of a certain kind of household, and for a certain period of time. As seen in the previous chapter, Monty workers, like maquila workers in general, seem to 'enter' and 'exit' work, depending on the immediate income necessities of their households.

According to Mr. Castillo, the Programme for Employment successfully targeted the sons of *ejidatarios* who were in an economic crisis after the liquidation of the henequen industry (see also García de Fuentes and Morales, 2000). Thus, unlike the Northern Border Industrialisation Programme, which failed to integrate agricultural workers (to the maquila) after the end of the *Bracero* Programme (Young, 1986b; Stoddard, 1987; Barajas, 1989; Fatemi, 1990), the Programme for the Ex-henequen Region seems to have been successful in attracting what would otherwise have been a new generation of agricultural workers (or potential migrants in search of jobs).

Nevertheless, the incorporation of young single women (and relatively fewer mature elderly females) like in the northern border, supposed the inclusion of a labour force that usually did not work in the formal economy. Therefore, in Yucatán, as along the northern border, the EMI

[8] Interview with Mr. Castillo (2003).
[9] Interview with Ing. David Loria (2003).
[10] Interview with Lic. Mena (2003).

incorporated a significant number of workers new to the work market. This resulted, in both cases, in the expansion of the labour pool, an aspect that certainly benefits maquila employers.

7.3 Household Type and Size by Civil Status

Even though most Monty workers live in large families, there were still a significant number of Monty workers living in smaller family units (Table 7.2). These were usually small nuclear families composed of married workers usually with children, but there were also a significant number of single workers living in small family units (Table 7.3). Very few married workers lived alone as a couple (therefore in a small nuclear family), other childless couples usually lived with their parents (thus in a large extended family) (Tables 7.3 and 7.4).

Table 7.3: Family Type and Size by Civil Status of the Monty Worker

		Small Families N=47		Large Families N=78	
		Nuclear per cent	Extended per cent	Nuclear per cent	Extended per cent
Civil status	Single	36.2	6.4	28.2	28.2
	Married	53.2	4.3	11.5	26.9
	Widow/	0.0	0	1.3	0.0
	Separated	0.0	0	1.3	0.0
	Divorced	0.0	0	0.0	2.6
Total		89.4	10.6	42.3	57.7

With only one exception, every single Monty worker lived with their parents (Table 7.4). Most married workers lived either with their wife/husband and children, or were childless and lived in their parents' or in-law's house (Table 7.4).

Table 7.4: Family Composition and Civil Status of Monty Workers

		Family composition						
		Living with his/her parents	Living with his/her in-laws	Living with his/her wife/ husband	Living with his/her own family	Living with his/her wife/ husband and other relatives	Living alone	Total
Civil status	Single N=65	98.5	0.0	0.0	0.0	0.0	1.5	100.0
	Married N=53	7.5	20.8	1.9	62.3	5.7	1.9	100.0
Total N=118		57.6	9.3	0.9	28.0	2.6	1.7	100.0

Only 11.5 per cent of married Monty workers lived in a large nuclear family (compared to 28 per cent of single workers), presumably because Monty workers are young and young married men or women are unlikely to have a large family (Table 7.3). If Monty workers worked for longer at the plant, perhaps we would have found more large nuclear families among the married workers.

The fact that only two per cent of the married workers lived alone as a couple suggests that few married workers leave their parent's, in-law's or relative's house — and sacrifice potential savings — before having a child. Young married couples — usually with children — said they 'moved from home' principally because they 'got married' and 'finally got a house' (85 per cent). Childless couples tend to remain with other relatives to save money and consolidate their economic situation until they have a child.

In general, the shaping of nuclear families with children supposes the dissolution of extended families, a process that seems to be part of the household life cycle of many Motuleños (and thus, Monty workers). The limited range of household types in the state and the region (and notably among Monty workers) suggests that most households follow a linear life cycle, generally passing from an extended to a nuclear family (and so on). Such (hypothetically widespread) family dynamics could respond to 'family values', but also to the social and economic characteristics of the region. After all, Motuleños are local inhabitants of a 'deprived' semi-rural region. Such a linear household life cycle could well be the result of regional labour conditions, (rural/semi-rural) family dynamics and household survival strategies.

In contrast, the households of urban maquila workers, at the time of maquila expansion in the 1980s, were found to be relatively varied and 'dynamic' (Fernández-Kelly, 1983; Kopinak, 1995; Cravey, 1997). However, the cases of single mothers living with (usually female) relatives or maquila workers sharing the house with friends or co-workers, have long ceased to be mentioned in the literature on the maquilas. On the contrary, more recent evidence suggests that maquila workers in Tijuana live in either nuclear or extended families (Carrillo and Santibañez, 2001). It is clear though that the family life cycles of Monty workers seem to differ from the urban low-income households studied by Chant (1991) and Cravey (1997).

According to Chant (1991), the household life cycles are more varied and complex in the case of low-income urban households, principally because these are usually composed of migrants and/or cyclical migrant members. Settling down in the city entails a complex process of social

Table 7.5: Number of Income Participants in Monty and Non-MW Households

No. of income participants	Single Monty workers N=63 per cent	Married Monty workers N=56 per cent	Non-MW N=74 per cent
1	3.1	34.6	43.2
2	35.9	40.4	35.1
3	29.7	13.5	14.9
4	23.4	7.7	2.7
5	7.8	3.8	1.4
Total	100.0	100.0	100.0

Unlike the case of single adults, married workers usually had only one or two income participants in their family, and rarely had more than three people working outside the home (Table 7.5). The lower number of income earners in the household married workers can be explained in terms of smaller family size, implying relatively 'fewer' income needs and fewer family members of working age. Moreover, the nuclear families of married workers usually included children (89 per cent) — potentially keeping female income earners at home.

Similarly, the households of non-MWs usually contained only one or two income earners, with many of the families having only one (Table 7.5). The low number of income participants in non-MW households could be also explained in terms of smaller family size and the fact that these families lived in the city of Motul. Relatively better salaries and more working opportunities were said to be found in the city, compared with the surrounding (more rural) municipalities.[12] Arguably, fewer income earners could, therefore, satisfy the household needs.

Only nine per cent of single Monty workers were reported to have a mother working outside the home — in all cases as a seamstress or a domestic servant (Table 7.6). None of the single Monty workers had a mother working at Monty — a finding consistent with the data on the age structure of the labour force.

[12] Interview with Dra. Beatriz Castilla and Dra. Beatriz Ramos (2003), senior researchers on gender issues at the UADY.

Table 7.6: The Activities of Female Members of Monty and Non-MW Households

Adult females' principal activity	MWs' mothers N=65 per cent	MWs' wives N=34 per cent	Non-MW (adult females N=68) per cent
Housekeeper	91.4	82.4	62.3
Seamstress/ domestic service/store employee/artisan/	8.6	0	37.7
Female MW	0.0	17.6	0.0
Total	100.0	100.0	100.0

Female employment was far more common among married Monty workers and, interestingly, was limited to employment at Monty. While 82 per cent of Monty workers' wives were housekeepers, the other 18 per cent worked at Monty (Table 7.6). On the other hand, the married female Monty workers (36 per cent of the married population), were usually married to a man employed locally or to a male Monty worker, and were usually 'older' workers (Table 7.7). In all cases the husbands of married female Monty workers were also in employment.

Table 7.7: The Activities of Female Monty Workers' Husbands

Men married to female Monty workers N=18	
Female Monty worker married to a locally employed male	55.6
Female MW married to a male MW	44.4
Total	100

Thus, on the one hand, all the single Monty worker's fathers had a job, but very few of their mothers worked outside the home. In addition, all the husbands of married female Monty workers were in employment, while most married male Monty workers had a wife at home. These findings suggest that mature men are usually the more stable source of income (very possibly the principal income source) for the household, and that married women only work when it is 'necessary' and at particular stages of their lives. Married women seem not to work: 1) when there are enough income earners (usually the husband and children); 2) when husbands bring in 'enough' income to the household; and 3) arguably, when they have small children.

For some reason non-MW families (living in Motul) had significantly more married women working outside the home than Monty workers' families (Table 7.6). These women usually worked as domestic servants and shop-keepers, in a few cases as artisans or teachers. The reasons why more married females in non-MW might work outside the home are numerous. For instance, smaller family size and fewer income participants may be important factors, but also the fact that non-MWs live in Motul. It is unlikely that more women among non-MW families work outside their home because they live in poorer households. It is widely acknowledged that living standards in the city of Motul are and have always been higher.[13] For instance, more prosperous farmers in the region move to the city when they have enough money.[14] Thus, the significance of Motul importance as a commercial and economic centre might offer a more feasible explanation as to why more women married to non-MWs work outside the home.

Although Motul is a small town, Motul offers significantly more employment opportunities than the rural municipalities surrounding it, as well as the possibility to travel to Mérida at almost any time.[15] A trip from the centre of Motul to the centre of Mérida takes no longer than 45 minutes, and buses and 'taxis' leave every 15 minutes.[16] In contrast, inhabitants living in the surrounding municipalities have to travel to Motul first if they want to work in Mérida, incurring further travel expenses and meaning more time spent commuting. Moreover, Motuleño women (from the city) are known to have worked as domestic servants in Mérida for a long time.[17]

7.5 The Household Structure of Monty Workers

The families of single Monty workers were usually composed of: a) a female housekeeper; b) a mature/elderly male (usually the principal income earner) working locally or in agriculture; and c) one or two single Monty workers (see categories I and II and IV in Table 7.8). Large families with one single Monty worker (categories I and II) usually had a second single (unmarried) additional income earner, working in a local job, although these do not appear in the table. Very few households had both a father and son working at Monty, presumably due to the age structure of the Monty workforce (see category III in Table 7.8).

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[13] Interviews with Dra. Castilla (2003), Dra. Ramos (2003) and Mr. Castillo (2003).
[14] Interview with Mr. Castillo (2003).
[15] Interview with Mr. Castillo (2003).
[16] Op cit.
[17] Interviews with Dra. Castilla (2003), Dra. Ramos (2003), Mr. Castillo (2003) and Arq. Roberto Medina (2003), Director of Communal Development in the state government.

Table 7.8: Single Monty Workers Grouped According to Main Income Participants and Family Size

		Family size		
		small	large	Total
Main contributors to family income N=65	I Father working in agriculture and one single MW	0.0	15.6	15.6
	II Father working in a local job and one single MW	18.8	17.2	35.9
	III Father working at Monty and one single MW	1.6	3.1	4.7
	IV Father working locally and at least two single MWs	9.4	34.4	43.8
	Total	29.7	70.3	100.0

On the other hand, the families of married Monty workers were more varied. They were usually composed of: 1) a) a male Monty worker; b) a female housekeeper and (usually) children (category I in Table 7.9); or 2) (usually childless) couples with both adult members working at Monty (category II); or 3) a) an 'older' female Monty worker (usually with 'older' children) married to b) an employed male (category III). The families of married Monty workers were very rarely found to contain more than one (mature/'older') male working at Monty or a parent and son/daughter working at the plant (categories IV and V in Table 7.9).

Table 7.9: Household Structure of Married Monty Workers Grouped According to Main Income Participants and Family Size

		Family size		
		small	large	Total
Main contributors to family income N=52	I Male MW wife housekeeper	26.9	19.2	46.2
	II Couple working at Monty	17.3	9.6	26.9
	III Female MW, males employed locally	3.8	15.4	19.2
	IV Father/son MW	0.0	3.8	3.8
	V Male MW other male relative MW	0.0	3.8	3.8
	Total	48.1	51.9	100.0

To sum up, when the households of married Monty workers contained only one income earner, it was usually a male 'breadwinner' (category I in Table 7.9). When they had two income earners, it was usually a couple working at Monty or a woman Monty worker married to a man employed locally or in agriculture (categories II and III in Table 7.8). Larger families with married Monty workers had several income earners, usually men working in agriculture, although these do not appear in the Table. In fact, 48 per cent of the larger families of married Monty workers had three or more income earners.

In general, large families had one more income earner (in average) than small families, whether the Monty workers were single or married. Large families had an average of three income earners, compared with just two among small families. This seems to confirm that the families of Monty workers depend on 'as many income earners as possible' to achieve a sufficient income.

As was found for the single population — and given the age structure of the Monty workforce — very few households contained both a father and son/daughter working at Monty (see category III in Table 7.8 and category IV in Table 7.9).[18] As can be appreciated, in cases when workers were single, the additional Monty workers were also usually single, and thus brothers or sisters of the Monty worker. In cases when workers were married, the additional Monty worker was usually the wife/husband, or more rarely a ('older') relative (usually a brother) of a male worker.

In general, single Monty workers seem to be 'additional' income earners for their households. What this implies is that work at Monty is (still) addressed at single (additional) income earners, who give stability to the household income, but (as we will see in the next section) do not necessarily contribute the largest income share. Indeed, almost all the households of single Monty workers contained an adult male, who was the principal income earner. The economic stability provided by the earnings of single adults could well explain the very limited employment among the mothers of single workers. It would appear that the extra income generated by single workers serves to the employment of married females.

Katz and Correia (2001) point that in cases when there are several income earners, the contribution of married women in the house is valued more highly than the money they might

[18] Workers having a son working at Monty potentially had to be at least 32 years old, assuming that they became parents at 16, and that their children working at Monty are also 16 years old. As noted earlier, the average age of MWs is 24.5, with very few workers over the age of 33.

be able to earn if they worked outside the home. In addition, married female employment in rural Mexico seems mostly to occur when households experience economic shocks, or when households are in extreme need (Pagán and Sánchez, 2001). Moreover, married women in rural areas usually work in trade and very rarely are they formal employees.

Let us remember that although the local government built a nursery to allow female Monty workers with children to continue work; according to Mr. Castillo the nursery did not seem to be widely used.[19] The literature notes that rural women usually do not like to leave their children with 'strangers' and rarely count on relatives to care for them (Katz and Correia, 2001). As with Monty workers, female maquila workers in Juárez do not seem to rely on nursery services to keep their job (Carrillo and Santibañez, 2001). Even low income female urban workers with small children usually try to find a more flexible job that allows them to take care of their children and work (Chant, 1991). Thus, motherhood seems to be a priority among Mexican women and particularly in rural areas, and thus, the relatively limited participation of women at Monty is hardly surprising.

In fact, almost all the families of single Monty workers (extended or nuclear) are composed by fathers who are the main income earners, children as 'additional income participants' and mothers acting as 'caregivers'. The fathers of single Monty workers (as specified by interviewees) were those usually contributing the most to the household —although, as we will see, they do not necessarily earn more. Moreover, the fathers of single Monty workers — as we will see shortly — were also usually the 'spending decision-makers'. Such a family structure and dynamic seems to reflect the Motuleños' 'patriarchal' values somehow contradicting the notion that 'female headed households are multiplying' among low income urban households (Chant, 1991; Chant, 2004). As with single workers, most married workers also lived in a family in which the husband was the main income earner and spending decision-maker, and the wife did not work outside home (54 per cent).

Thus, we can say that the incorporation of Motuleños to maquila activities has enabled families to reproduce and shape mainly 'patriarchal families', while incorporating a significant number of young single men and women into the work market. Although the questionnaire surveys and interviews did not provide any information on the type of activity performed by 'older' men (ex-MW) after leaving Monty; a list of the types of job performed by male relatives of Monty workers and men in the control sample will provide an idea of the types of employment that

[19] Interview with Mr. Castillo (2003).

those men might engage in after working at Monty. Most of the jobs found in the Motul region fall into the category of 'minor temporary jobs' (See appendix p. 399-400).

Moreover, the relatively limited number of households composed of a female Monty worker married to a man employed locally or in agriculture, is consistent with the traditional division of labour of the region. The dominance of men in the Monty workforce (and more particularly of married men among the married workers) demonstrates the dominance of patriarchal family structures. Nevertheless, many single women work at Monty and tend to stop when they marry and have children, some coming back when their children are more independent.

However, the 'emergence' of smaller nuclear families in which both wife and husband work at Monty (28 per cent of the families with married Monty workers) suggests that changes in family composition and structure might be underway. Changes in the family size and power relations of couples working at Monty could be observed, that have strayed from the 'traditional patriarchal, rural family' mentioned above (Tables 7.10 and 7.11).

Table 7.10: Income Decision-makers (Headship) in the Households of Monty Workers

		Single MW N=64	Married MW N=38	Couples working at Monty N=15	Non-MW N=72
Income decision maker	Both husband and wife	5	29	40	24
	Male	52	61	40	54
	Female	35	8	20	18
	Women	3	3	0	0
	Single MW	5	0	0	4
Total		100	100	100	100

In cases when both wife and husband worked at Monty, the economic decisions of the household were more often shared between the two, than was true for the rest of the workers (Table 7.10). Also, the distribution of male and female income decision-makers was more balanced among the couples working at Monty (Table 7.12). However, even when both husband and wife worked at Monty, twice as many men as women seem to take the household spending decisions (Table 7.10). Perhaps unsurprisingly, the households of single Monty workers were more usually run by the father.

The families in the control sample were also usually run by an adult male, although many more women took the spending decisions in the household, compared to the cases of single and married Monty workers (except when couples worked at Monty) (Table 7.10). Given that families in the control sample lived in the city of Motul, and that relatively more women there work 'outside the home', less traditional patriarchal families seem to be the norm amongst non-MWs.

INEGI data on family structure for the year 2000 reported that 82 per cent of families in Yucatán had a male 'head of family', while of the figure for families in Motul and selected municipalities was 87 per cent (INEGI, 2006). In my sample 'headship' was attributed to the person who takes the spending decisions. Workers were not directly asked who the head of their household was. This might explain why considerably more female and shared headships were found in both the Monty workers and non-MW samples compared with figures at the state and regional levels. In any case, judging by the percentages of men taking the spending decisions in the households of Monty workers and Non-MWs, it is clear that men are usually considered the heads of their family, as is true at the level of the region and the state. In addition, married men in both samples were usually presented as the main income participants of the household.

To sum up, maquila employment is mostly addressed at young (preferably single) income earners from large households; as noted in the previous chapter, rarely working at Monty for more than three years. Their length of employment at Monty varies according to the gender and civil status of the worker. It is often the case that more than one single (or married) member of the same family works at Monty, particularly when families are large and have several members of working age. Similarly, maquila workers in Tijuana were also often found to have several family members working in the maquila industry, quite often in the same plant (Carrillo and Santibañez, 2001). More generally, González de la Rocha (2006) confirms that household survival strategies, still depend on the availability of several income participants (performing very different jobs though), notably young family members.

At Monty, as in the maquiladoras of Tijuana, maquila employment seems to be a temporary/cyclical job for young workers to boost the household income, until better opportunities come up. That explains the high turnover rates in Tijuana and at Monty, and in the EMI in general. The fact that maquila employment is considered a cyclical/temporary form of work by most of the workforce also explains why several members of maquila workers' families have to go out to work. The low maquila salaries seem to prevent households from

living on a sole maquila worker's salary, obliging families to send as many income earners as possible (particularly the young) out to work.

7.6 The Economic Impact of Monty at a Household Level

As described above, the larger family size among Monty workers implied more income earners. Thus, although family composition and size varies between married and single workers, the dependency ratios are very similar (Table 7.11). However, the families of single Monty workers had on average (almost) one more family member and one more income earner than those of married workers (Table 7.11). The extra income earner in those families was usually a father working the land or in a local job (see Tables 7.8 and 7.9).

Table 7.11: Income earners, Family Size and Dependency Ratios in the Families of Monty Workers

Average no. of income earners	Average no. of income earners		Average family size (no. of members)		Dep. Ratio (income earners/family members)	
All MW N=122	Single N=63	Married N=56	Single N=63	Married N=56	Single N=63	Married N=56
2.6	3.0	2.2	5.8	5.1	0.6	0.5

The average number of Monty workers per household is almost identical in the two groups (Table 7.12). There are, on average, two Monty workers per household (Table 7.12). In other words, each family had (on average) 0.5 'additional' Monty workers. The average number of 'additional' Monty workers was also very similar in the families of single and married workers (Table 7.12).

Table 7.12: Number of Monty Workers per Household among Monty Workers' Families

Average no. of additional MWs per household (total number of additional MWs/no. of families)		Average no. of MWs per household		Estimated income per household (no. of minimum salaries)	
Single N=63	Married N=56	Single N=63	Married N=56	Single N=63	Married N=56
0.5	0.6	2.0	2.1	4	5

Note: the estimated income per household results from the expected number of minimum salaries contributed by single and married Monty workers (1 and 2.5 minimum salaries respectively), multiplied by the average number of Monty workers. The households of single workers seem to have at their disposal two additional minimum salaries contributed by a father employed locally or in agriculture. Further details are given below.

What this shows is that: 1) the probability of finding more than one family member working at Monty — in a Monty worker's family — is high, whether the workers are single or married; 2)

Monty workers' (aggregate) earnings account for most of the household income; and 3) the (average) additional income earner among the families of single Monty workers is a father employed locally or in agriculture.

Consistent with these findings, Carrillo (2001) found an average of 2.1 income earners per family among garment maquila workers in Tijuana (2.6 in my sample) and a striking 1.2 additional maquila workers working in the same plant (0.5 in my sample) (Carrillo and Santibañez, 2001: 44, 45). What this shows is that: 1) maquila workers — at Monty and in Tijuana — usually live in family units with several income earners; 2) quite often in these cases more than one income earner works in the same plant; and 3) the additional income earners in Monty workers' families rely less on the maquila than do the family members of maquila workers in Tijuana.

Castilla (2002 and 2004) emphasised that an instrumental part of the success of Ormex — the first maquiladora in Yucatán — was that most of its labour force was composed of relatives and friends of the initial employees. The managers at Ormex identified several advantages in employing workers who 'knew each other' and could 'improve the working environment'. However, most of the Ormex employees are women, usually the daughters of ex-henequen workers, working in a capital intensive maquiladora (located in Mérida) and exporting dental care products to the USA (Castilla, 2002; Castilla, 2004). Similarly, Fernández-Kelly (1983) and Carrillo (2001) insisted that the managers of the clothing and electronics maquiladoras in the north, tended to employ workers from the same families (from the beginning of maquila operations to date), apparently for similar reasons to those given by Dr. Castilla (2002).

7.6.1 Monty workers' household earnings

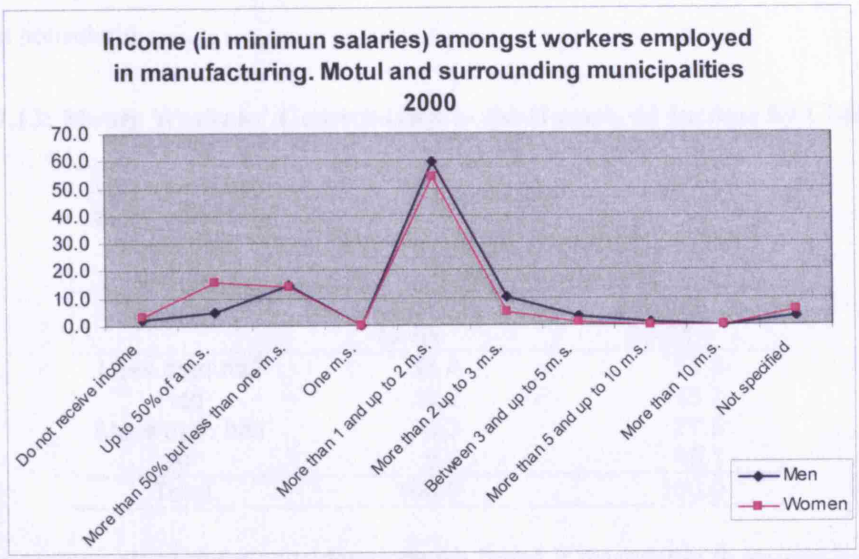
Since workers were not asked directly how much they earned, several sources of information had to be considered and certain assumptions made to come up with an estimate of the total incomes of Monty workers' households (see Table 7.12).

First, the most direct source of information was Lic. Mena who informed us that '(...) salaries at Monty range from two to four minimum salaries, depending on the workers' capacities'.[20] However, contrary to Lic. Mena's suggestion, census data indicate that workers (in the region) employed in manufacturing activities very rarely earn more than two minimum salaries (figure

[20] Verbatim.

7.1). Workers earning 'more than two' to 'three' minimum salaries (around 7.5 per cent of the workers employed in manufacturing activities) are probably those few experienced 'assembly line' workers that Lic. Mena referred to. The workers earning more than three minimum salaries are most probably staff employees (supervisors) (figure 7.1). Although it is difficult to corroborate these assumptions we can contrast Lic. Mena's information with other data.

Figure 7.1: Regional Earnings (in Minimum Salaries) of Workers Employed in Manufacturing Activities



Source: INEGI (2006)

For instance, Sotelo (2004) finds that the average maquila assembly line worker in Mexico earns 2.5 minimum salaries. However, Sotelo's average maquila wage included all northern border maquila employees. These earn more than maquila workers in the south and are significantly more numerous (Fleck, 2001) — thus, pulling the average maquila wage up. In addition, clothing maquiladoras are known to be pay the lowest salaries in the maquila industry (Kopinak, 1995; Cravey, 1997; Wilson, 2002). Hence, it is very unlikely that a significant number of workers at Monty earn much more than two minimum salaries, let alone four.

Second, Lic. Mena added that more experienced and responsible workers could earn twice that earned by inexperienced workers.[21] It is not possible to ascertain the proportion of experienced to inexperienced ones based on the available data. Nevertheless, we do know that it is married workers that rotate less and stay longer at the plant. [22] They are also considered to be more responsible and reliable than single workers, a pattern also found in the maquiladoras of the

[21] Interview Lic. Mena (2003).
[22] *Ibid.*

north (Carrillo and Santibañez, 2001).[23] Therefore, it seems reasonable to assume that the married workers are those experienced workers that Lic. Mena referred to.

Third, we have to consider the differences in the contribution made to the household between married and single workers. Married workers usually contribute all the..' ary or more than half of it, while single workers tend to contribute half of their salary or less (Table 7.13).[24] Similarly, Fernández-Kelly (1983) and Carrillo (2001) reported that single workers usually keep half of their salary for personal expenses, while married workers usually contribute all of their salary to the household.

Table 7.13: Monty Workers' Contribution to the Household Income by Civil Status

Share of salary destined to the household income	Monty workers' contribution to the household income	
	Single N=58	Married N=51
Less than half	53.4	11.8
Half	36.2	15.7
More than half	10.3	27.5
All	0.0	45.1
Total	100.0	100.0

Taking into account all of these considerations we found it reasonable to assume that: 1) single Monty workers earn on average two minimum salaries, but only contribute one minimum salary to the household; and 2) married Monty workers could contribute two and a half minimum salaries, given that: a) the average maquila wage in the country is two and half minimum salaries; b) married workers tend to earn more than single workers; and c) married workers usually contribute all their salary to the household.

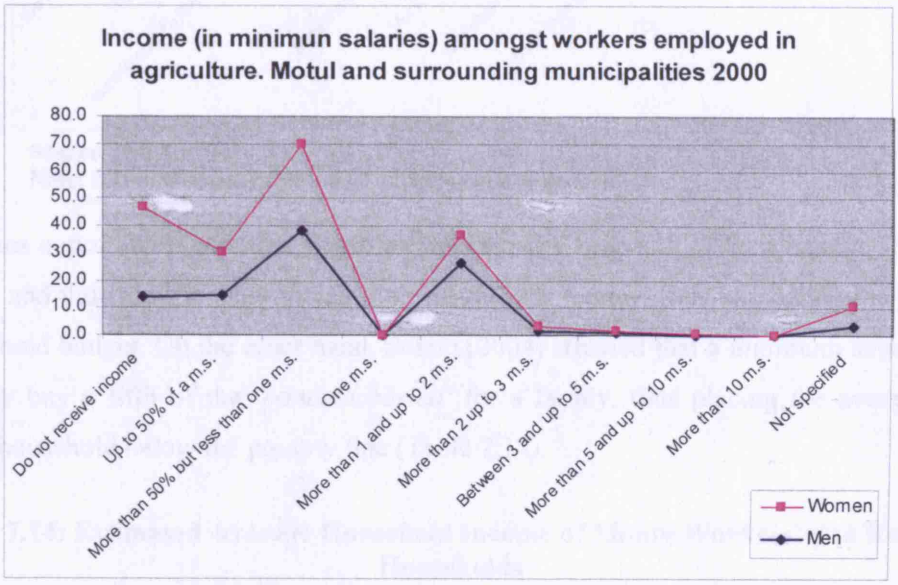
Given that the families of Monty workers have two Monty workers on average, and in the case of single workers, these usually also include a father employed locally (less usually in agriculture); these families should have more than two minimum salaries a month at their disposal, which is the threshold set by state government officers to characterise a family as below the poverty line (see Table 7.12).[25] Indeed, the average earnings of Monty workers' households amounted to 3.5 minimum salaries (Table 7.14). The estimates in the table were calculated assuming that the father of each single Monty worker contributed with two minimum salaries (see Table 7.12). On the one hand, we know that Monty workers' fathers are usually the

[23] Interview with Lic. Mena (2003).
[24] Carrillo (2001) did not provide similar data.
[25] Interview with Mr. Janitzio Durán (2003).

main contributors to the household and, on the other hand, INEGI data shows that workers employed in industries other than agriculture generally make two minimum salaries.

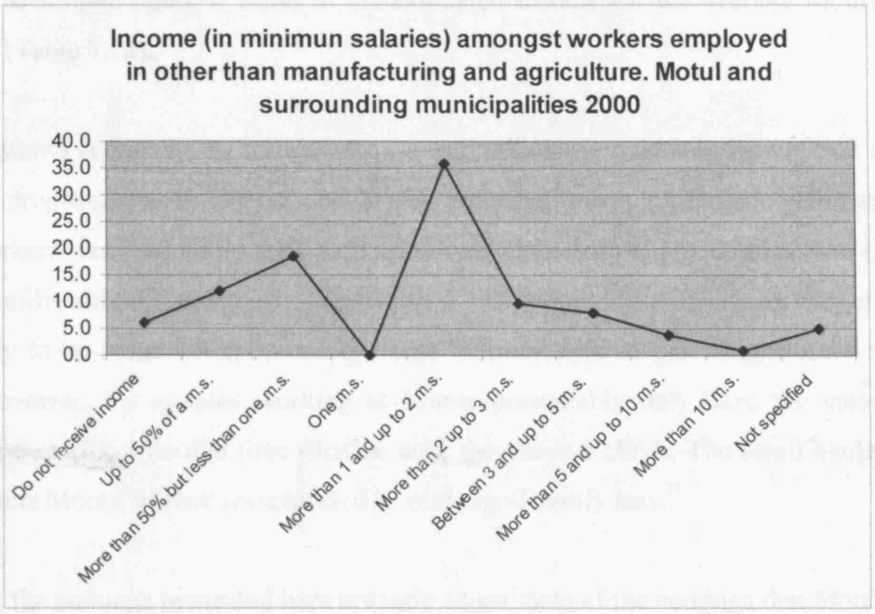
Agricultural workers rarely earn more than one minimum salary, most earning between one half and less than one minimum salary, many not earning any money at all — these being presumably small holders (Figure 7.2). On the other hand, around 73 per cent of the workers employed in jobs other than manufacturing or agriculture, earn from zero to two minimum salaries (Figure 7.3). The majority (54.5 per cent) earned from one half up to two minimum salaries (Figure 7.3).

Figure 7.2: Regional Earnings (in Minimum Salaries) of Workers Employed in Agriculture



Source: INEGI (2006)

Figure 7.3: Regional Earnings (in Minimum Salaries) of Workers Employed in Sectors Other than Manufacturing and Agriculture



Source: INEGI (2006)
Note: data in this case could not be disaggregated by gender.

It is perhaps important to note that single workers usually keep half of their income for personal expenses, and thus, do not need to ask their parents for money, thus alleviating the burden on the household budget. On the other hand, Sotelo (2004) stressed that a minimum salary in 1991 could only buy a fifth of the '*canasta básica*' for a family, thus placing the average Monty worker's household below the poverty line (Table 7.14).

Table 7.14: Estimated Average Household Income of Monty Workers' and Regional Households

	Monty Workers' families	Single MWs' families	Married MWs' families	Average regional family	Poverty Line	*Canasta básica* price
No. of minimum salaries	[illegible]	4	5	3.1	2	5

Source: Own data and INEGI (2006)
Note: the poverty line was set at two minimum salaries according to interview with Arq. Roberto Medina (2002), Director of Communal Development for the state government. The price of the *canasta básica* was taken from Sotelo (2004).

According to INEGI data, in 2000 the monthly minimum salary for the southern region of Mexico (region C) was of 708.5 pesos (US$70.85) (INEGI, 2006). Census data indicate that in the year 2000 low income families in Motul and selected municipalities region earned — from salaries alone — an average of 1,933 pesos a month (INEGI, 2006). That is, almost three minimum salaries (2.7). Total earnings — salaries plus additional earnings such as

PROCAMPO — were, on average, 2,226 pesos/month or 3.1 minimum salaries (INEGI, 2006).[26] The former figure is close to the estimated income for the average Monty worker's household (Table 7.14).

What this shows is that: 1) my estimations are well within the estimates for regional income per household proposed by the INEGI; and 2) that according to my (optimistic) estimations many Monty workers' families could well earn one or two more minimum salaries than the average regional family, although some earn less (Table 7.14). In fact, the couples working at Monty are those likely to be better off followed by large families with several single adults working at Monty. However, the couples working at Monty presumably only have the income of two married workers for a limited time (that is, until they have a child). The small nuclear families with only one Monty worker are expected to earn significantly less.[27]

In general, the earnings presented here are only an estimate of the earnings that Monty workers' households might receive for a certain period time, given the high turnover rates, particularly among single workers, and ultimately other relevant aspects of the local labour market.

7.7 Spending

Consistent with the idea that 3.5 minimum salaries (on average per household) is relatively little to satisfy the needs of a large family, most Monty workers declared that they spent most of their salary on food, followed by health, clothing, education and housing. Some 95 per cent of the workers identified food as the principal source of expense. Health was placed second by 40 per cent of the workers and clothing third by 35 per cent. Only one per cent stated that housing was their largest expense, while five per cent ranked it as the second and third most significant expense. Education was ranked first, second and third in the following proportions: three per cent, five per cent, ten per cent.

Contrary to what is usually found in the literature on northern maquiladoras (Carrillo and Santibañez, 2001), transport was mentioned as the second and third largest source of expense by only two per cent and three per cent of the respondents, respectively. Monty workers do not seem to be too worried by transport expenses, simply because workers living in the more distant

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[26] ...round £117 (at an exchange rate of 20 pesos/£1).

[27] González de la Rocha (2006: 81) finds that the reasons that families have 2.5 income earners is usually related to female employment, and 'better economic circumstances' among low-income (urban) families.

municipalities use transport provided free by Monty (68 per cent of the workers in the sample, 50 per cent of the total workers).

Sample data indicated that workers living in the city of Motul cycle (78 per cent), walk (six per cent), use the Monty transport (six percent) or use the local public transport (ten per cent). Lic. Mena (2002) emphasised that the idea of paying the transport of workers living in the more distant 'comisarías' or municipalities was not initially contemplated, but that they took the decision to incorporate such costs as part of Monty's regular expenses in order to maintain 'a more stable labour force'. This confirms the idea that for Monty workers (as for maquila workers in the north) travel expenses are an important factor in the decision over whether to keep on working in the maquila or perhaps even to take a maquila job in the first place (Young, 1986b; De la O, 2000; Carrillo and Santibañez, 2001).

Interestingly, more than half of the Monty workers (58 per cent) declared that they 'raised animals' at home for family consumption (mainly chickens, turkeys, quails and pigs), and 48 per cent declared that they 'grew crops' for the same purpose. That proportion was very similar to that of regional inhabitants 'raising animals at home' (61 per cent) (INEGI, 2007). The non-Monty workers of Motul also seem regularly to grow crops (53 per cent declared that they did so) and to raise animals at home (51 per cent), which serves as confirmation of Motul's semi-rural character.

More importantly, 45 per cent of Monty workers seem to spend part of their earnings 'on a regular basis' and in a relatively 'substantial proportion' on growing crops and raising animals at home. However, 55 per cent stated that they 'did not spend any of their earnings on such activities' — usually single workers and married couples working at Monty, most of whom lived in the municipalities surrounding Motul.

In fact, 55 per cent of Monty worker couples declared that the production of food at home was 'fairly' important and 'only' 33 per cent stated that they were involved in breeding animals (12 per cent grew crops) at home, compared with 58 per cent and 48 per cent of the total workers, respectively. However, 44.5 per cent considered that producing food at home was 'very important' and a staggering 88 per cent said they were interested in 'acquiring land', perhaps thinking of a future potential source of food (at a time when adult members would no longer work at Monty). Similarly, 82 per cent of the total number of workers declared that they were

interested 'in acquiring land', which proves that Monty workers (still) rely heavily on food production at home to complement household earnings in providing for household consumption.

As for the money allocated to their houses, 40 per cent of the workers said 'they had not invested in household repairs or works within the last two years'. The remaining 60 per cent declared to 'have invested within one year' or 'just six months prior to my visit'; shortly after hurricane Gilberto destroyed many Motuleños' houses. As a consequence, most of the works carried out were connected to roof repairs (22 per cent of the total) followed by other 'minor' repairs (windows, doors, floors, paintings, remodelling..., etc.) (21 per cent).

Few workers declared their investments as being part of the payments to acquire a new house (five per cent). The remaining 21 per cent referred to the building of additional rooms. Around 80 per cent of the workers that invested in their house spent between 0 and 5,000 pesos (1,291 pesos on average or around US$130), with very few making major investments. Only 12 per cent spent more than 10,000 pesos, and only one worker declared to have invested more than 130,000 pesos (or around US$1,000 and US$1,300, respectively). No data to contrast these findings was available from the INEGI or the control sample.

With regard to education, most respondents (74 per cent) declared that they had not invested in any extra educational activity for any of their relatives after entering Monty. Only around 26 per cent said they had invested in a relative's education (18 per cent brothers or sisters, five per cent sons, two per cent didn't specify and one per cent invested in a cousins' education). What this proves is that either free education in Motul satisfies the needs of Monty workers, or that Monty workers rarely allocate any of their income to education.

7.8 Housing

Most Monty workers lived in 'their own home', or in a home 'owned by a kin member or relative' (96.5 per cent); only 3.5 per cent rented or were buying a house. All non-MWs of Motul lived in a house owned by a relative, none paid rent. Similarly, most people in the state of Yucatán own their own home (85 per cent).

Private tenure of houses in the city of Motul and throughout the region presumably gives Monty workers some economic relief. Contrary to the situation of northern border maquila workers — and low income households living in cities — Monty workers only incur maintenance (and

sometimes building) expenses, but do not need to allocate part of their income to paying rent (Young, 1986a; De la O, 2000). Quite importantly, besides offering the possibility to host additional family members, semi-rural dwellings usually allow the cultivation of crops or animal rising. Home ownership also gives a certain psychological relief to parents who know they can at least pass on a property to their children.

As one might expect, most single workers lived in a house 'owned by their parents' (97 per cent), while 'only' 58 per cent of married Monty workers 'owned their own home'; 36.5 per cent lived in a relatives' house (mostly owned by their 'parents or in-laws'); only six per cent 'rented' or were 'in the process of buying a house'.

Around 59 per cent of the respondents had been living for more than ten years in the same house, which is consistent with the number of single workers at Monty and with the relative 'demographic stability' in the region. On the other hand, around 20 per cent of the workers (mostly married with children) had moved to 'a house' within a period of one to three years, and 21 per cent had moved to 'a house' four to ten years ago. The fact that more married workers now work at Monty is consistent with the relatively high percentage of workers declaring that they had moved 'relatively recently' (41 per cent).

Given that Monty worker's households are larger than the average household (in the state and the region); one might expect their houses to have more rooms. In fact, Monty worker's houses had two to three rooms more often than was found in the average house in the region and in non-MW households. Similarly, only 48 per cent of the houses in the state and 52 per cent of the houses in Motul had two to three rooms (see Table 7.15). Only 15 per cent of Monty workers' houses had a single room, compared with 40 per cent of the houses in the region and 41 per cent of the houses in the municipalities surrounding Motul (Table 7.15).

Table 7.15: Characteristics of Monty Workers' Houses: Number of Rooms

		% in Yucatán N=371,242	% in Motul and municipalities N=24,329	% in Motul N=6279	% in municipalities N=18,050	% of Monty workers N=126	% of non-MWs N=74
No. of rooms	1	28.4	40.0	36.5	41.2	15.1	21.6
	2	26.9	35.7	35.1	35.9	43.7	27.0
	3	21.1	15.1	16.7	14.5	27.8	14.9
	4	13.0	5.9	7.7	5.3	7.1	18.9
	5	5.7	2.0	2.4	1.8	2.4	5.4
	6	2.4	0.7	0.9	0.6	0.8	6.8
	7	1.1	0.2	0.3	0.2	0.8	4.1
	8	0.4	0.1	0.1	0.1	0.8	1.4
	9	0.5	0.2	0.2	0.1	0.8	n.a.
	n.a.	0.2	0.3	0.1	0.3	0.8	n.a.
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Own data and INEGI (2007)

On the other hand, fewer Monty workers had houses with four to five rooms — the percentage is similar to that in the region — compared to non-MWs (Table 7.15). Only four per cent of Monty worker's houses had six rooms or more, which is consistent with the average number of houses with six rooms or more in the state and the region (Table 7.15). Consequently, slightly more Monty workers' houses had between two to three bedrooms than the average for households in the region, Motul and the surrounding municipalities (Table 7.16). The proportion of houses with two to three bedrooms was very similar among Monty workers and non-Monty workers (Table 7.16).

Table 7.16: Characteristics of Monty Workers' Houses: Number of Bedrooms

		% in Yucatán N=371,242	% in Motul and municipalities N=24,329	% in Motul N=6279	% in municipalities N=18,050	% of Monty workers N=126	% of non-MWs N=74
No. of rooms	1	43.5	56.7	53.3	57.9	39.7	43.2
	2	40.8	34.5	36.8	33.7	43.7	43.2
	3	12.4	7.3	8.3	6.9	8.7	9.5
	4	2.6	1.1	1.1	1.1	0.0	1.4
	5 and more	0.5	0.2	0.3	0.2	1.6	0.0
	n.a.	0.2	0.2	0.1	0.2	6.3	2.7
	Total	100.0	100.0	100.0	100.0	100.0	00.0

Source: Author's own data and INEGI (2007)

More generally, on average there were found to be two Monty workers per room and 1.3 non-MWs per room. Thus, although Monty workers' houses usually have more rooms, and thus seem to be well adapted to the larger size of Monty workers' families, in relative terms Monty workers live in smaller houses.

Consistent with these findings, Monty worker's houses were not found to have a 'separate kitchen' in similar proportions to houses in the state in general, and compared to the houses of non-MWs. In fact, 33 per cent of Monty workers' houses had a 'non-exclusive' kitchen (meaning that the kitchen is also potentially used as a living room or a bedroom), compared to around 11 per cent of all houses in the state, the region, Motul and the surrounding municipalities (Table 7.17). Only 15 percent of non-MWs' houses had a 'non-exclusive' kitchen (Table 7.17). Thus, even though Monty workers' houses have 'more rooms on average', the occupants often have to use one of these rooms as a 'kitchen and living room (or bedroom)'.

Table 7.17: Characteristics of Monty Workers' Houses : Availability of a Kitchen

		% in Yucatán N=371,242	% in Motul and municipalities N=24,329	% in Motul N=6279	% in municipalities N=18,050	% of Monty workers N=126	% of non-MWs N=74
Kitchen	Exclusive	70.2	55.9	54.6	56.4	54.8	75.7
	Non-exclusive	11.7	11.0	11.0	10.9	33.3	14.9
	Without kitchen	16.2	31.3	32.8	30.9	11.9	9.5
	n.a.	1.9	1.8	1.6	1.9	0.0	0.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Author's own data and INEGI (2007)

On the other hand, a significantly larger proportion of Monty workers had running water 'in their houses' than the regional and the state average (Table 7.18). Consequently, a significantly lower proportion of houses among Monty workers had a 'distant' source of water, whether within the property or brought from 'another source' (Table 7.18). However, 15 per cent of Monty workers had to get water from 'a well', compared to 5.5 per cent of the houses in the state and ten per cent of houses in the region (Table 7.18). In this respect I can only comment that Mr. Castillo insisted that the provision of water to inhabitants of the state has risen sharply since the Monty plant was installed. The reason for this, he explained, is that Monty workers were then able to pay for the service and thus invested in systems that can provide water 'in the house'.[28]

[28] Interview with Mr. Castillo (2003).

Table 7.18: Characteristics of Monty Workers' Houses: Availability of Water

		% in Yucatán N=368,860	% in Motul and municipalities N=24,192	% in Motul N=6260	% in municipalities N=17,932	% of Monty workers N=126	% of non-MWs N=74
Water availability	In the house	53.8	27.0	37.0	23.5	66.7	89.2
	In the property	36.4	55.0	48.6	57.2	12.7	0
	Brought from another source	4.28	7.4	4.2	8.6	4.0	2.7
	Well	5.58	10.6	10.2	10.8	15.1	2.7
	n.a.	0.0	0.0	0.0	0.0	1.6	5.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Own data and INEGI 2007

Regarding the quality of the roofs, 24 per cent of Monty workers' houses have a roof made of 'light'/natural materials, which places them slightly below the regional average and very close to the state average. However, and perhaps not surprisingly — given that non-MWs' houses were located in the city of Motul — only 15 per cent of non-MWs' houses were made of light/natural materials (Table 7.19).

Table 7.19: Characteristics of Monty Workers' Houses: Roofing Materials

		% in Yucatán N=371,242	% in Motul and municipalities N=24,329	% in Motul N=6279	% in municipalities N=18,050	% of Monty workers N=126	% of non-MWs N=74
Roofing Materials	Light/natural materials	21.9	29.6	26.7	30.7	23.8	14.9
	Solid/ construction materials	78.1	70.4	73.3	69.3	76.2	85.1
	Total	100.0	100.0	1[illegible]	100.0	100.0	100.0

Source: Author's own data and INEGI (2007)

In other words, most Monty workers live in a house with a roof made of 'solid construction materials', a proportion that may seem high for low income, semi-rural households (Table 7.19). However, the incidence of hurricanes seems to be an important factor that determines the use of solid construction materials (although only recently) to build houses, and more

particularly roofs.[29] Traditional Mayan houses have roofs made of palm tree leaves resting on a wooden structure (see appendix p. 387). These are usually destroyed by the strong winds brought by hurricanes, which are very common in the region.

As noted previously, around 21 per cent of Monty workers had recently repaired their roofs after hurricane Isidore hit the region (around six months before my visit). That could explain the relatively high proportion of houses amongst Monty workers (and more generally houses in the region) with roofs made of solid materials.

What all these data show is that the houses of Monty workers are generally 'well' equipped with respect to the regional and state averages, but not necessarily with respect to the non-MWs' houses of Motul. Despite the relatively larger number of rooms, the relatively good quality of their roofs and the availability of a kitchen and running water, the houses of non-MWs are generally better equipped in all these respects. However, all Monty workers' houses were supplied with electricity, as are most houses in the region and the state.

Regarding the availability of household appliances (such as TV, refrigerator, computer and washing machine), most Monty workers (and non-MWs) were found to have a TV set, a refrigerator and a washing machine (Table 7.20). Not surprisingly, very few Monty workers had a computer (as was the case with non-MWs), compared to the state and national averages. The inhabitants of Mérida and Valladolid most probably played a large part in raising the state average.

Table 7.20: Characteristics of Monty Workers' Houses: Household Appliances

	National % N=n.s.	% in Yucatán N=368,860	% of Monty workers N=126	% of non-MWs N=74
TV	91	90.2	97.6	98.6
Refrigerator	79	71.6	54.0	56.8
Computer	19.6	16.3	0.8	5.4
Washing machine	62.7	65	63.5	59.5
Any	6.2	6.5	0.0	0.0

Source: Author's own data and INEGI (2007)

As Dra. Castilla (2002) explained to me, buying household appliances became relatively easy (and relatively common) in Mérida due to the credit facilities given to low income households. 'Elektra', one of the most successful appliance stores for low income households in Mexico (it

[29] Interview with Arq. Roberto Medina (2003).

also specialises in facilitating money transfers from migrant workers in the USA) facilitates the acquisition of practically any household appliance through several monthly payments. It is not uncommon for low income households in Mexico to have state of the art technology in household appliances, particularly when credit facilities and a stable (though limited) income are at their disposal.

Despite the relatively good quality of housing and the availability of home appliances, many Monty workers spoke of the need to develop infrastructure in greater Motul (82 per cent of the total). Monty workers did not seem to require basic services, but uniformly asked for 'paved roads', 'public lighting' and 'more cleaning', with some also mentioning the need for more 'parks' and 'sports facilities'.

Given that little industrial activity is carried out in the ex-henequen region, 84 per cent of the respondents stated that they were not particularly affected by pollution. Moreover, those who did refer to a source of pollution (61 per cent of those declaring to have 'been exposed to pollution') identified that source as natural (such as 'fires in the woods' and 'hurricanes') or referred to pollution derived from 'breeding animals at home'. On the other hand, 39 per cent of those that declared that they had 'been exposed to pollution', stated that they had been affected by the 'concentration' and 'management' of waste, and by 'polluted water' — to both of which Monty is a significant contributor.

7.9 Monty Work in Perspective

Although Monty is the major source of employment in the region, 41 per cent of the workers declared that the salaries at Monty were 'the same' as those paid in other jobs. However, 54 per cent of the workers considered salaries at Monty to be 'better' than the ones that they could earn elsewhere [in the region]; and only five per cent believed salaries at Monty to be 'lower' than those paid in other [local/regional] employments.

Workers who were working for the first time at Monty were those usually considering Monty 'a better than average' income source — presumably because inexperienced workers find it more difficult to get a job, let alone 'better paid' employment and cannot compare the earnings at Monty to those in any other employment. More experienced workers generally considered Monty to be a 'within the average' or 'worse than average' employer. As the census data indicate, most workers in the region earn between one and two minimum salaries, with

variations depending on the type of job and economic sector (Figures 7.16, 7.17 and 7.18). Often workers in the tourist sector earn more in certain periods of the year as do building workers when a major work is carried out.[30] These differences might explain the diverse views of Monty workers and, ultimately, the regional variations in income by economic sector according to INEGI.

Hence, most of those workers who had worked before — usually married male heads of family — did not consider that they had improved their incomes by working at Monty (83 per cent of male married workers who had worked before). For them Monty does not offer a significantly better salary compared to other jobs they have had. However, those prior employments were temporary, and more often than not required workers to travel. In contrast, most single workers — and notably married women — declared that they had more spending capacity than before (around 73 per cent of single workers and married women combined).

These results suggest that workers who believe that they have improved their spending capacity are workers: 1) that were not part of the traditional labour force (single and married women); and 2) workers whose first job is at Monty (mostly single workers). More importantly, other benefits, such as 'proximity to the workplace', 'paid vacations' and 'Christmas bonuses', were mentioned as attractive benefits by married male (experienced) workers, who could potentially earn a similar salary (but get less benefits) in other jobs.

Additionally, 32 per cent of the workers mentioned that they could get a mortgage through Infonavit or Fonacot, while ten per cent believed that they could ask for a loan at Monty to 'get a house' or 'move out from their parent's house'. Only three per cent mentioned 'other incentives', such as the payment of an extra full day's salary for more competitive workers.

Not surprisingly — given the length of the working day at Monty, only eight per cent of the workers said they had an extra source of income; all of them men, and representing only around 15 per cent of the male population. Most of those men also carried out agricultural work (70 per cent); followed by building (ten per cent), one musician and one tailor.

The fact that few workers are capable of maintaining an additional source of income confirms that work at Monty is a full time job, which rarely allows workers to continue other potentially lucrative activities. [The same could be said for building workers; although agricultural workers

[30] Interview with Mauricio Dzul (2003).

presumably have more spare time (particularly in certain periods of the year) as do workers employed in the service and tourist sectors].[31]

In fact, most workers said that they spent most of their free time 'indoors' (at home or visiting family and friends) (82 per cent), some of them resting (39 per cent) others 'working in the house' (43 per cent). Fewer workers said that they carried out 'physical activities' (14 per cent) or 'practiced a sport' (four per cent).

Perhaps not surprisingly (given the relatively safety of clothing maquila activities), very few workers actually had an accident at work. Most accidents were related to cuts while sewing, or to minor muscular injuries to hands and arms. Workers mentioned that 'mistakes' were made when they were 'tired', but that in general, the work was neither 'dangerous' nor did they lack safety equipment or feel 'unprotected'. Only seven per cent of all interviewed workers stated that they had cut their hand or fingers, and only five per cent suffered from pains in their arms, legs or ankles 'from working for too long'.

However, despite the fact that only around 13 per cent of the workers declared that they had suffered an injury, many more referred to 'knowing someone who had an accident at work' (40 per cent of the workers). Again, the most common accidents known to occur were 'injuries inflicted while working with the sewing machines'. When asked if they knew what kind of compensation was given to the workers that suffered any type of injury at work, most (80 per cent) referred to 'a few days of incapacity' and to 'immediate treatment in the nursery'.

Given the size of the Monty plant and the leading position of Monty in the jeans' industry, it is not surprising that Monty has state of the art safety standards.[32] Contrary to the experience in (some) northern maquilas mentioned in the literature, all Monty workers confirmed that they were obliged to use at least the minimum safety equipment. That safety equipment consisted of a 'mouth cover', 'belt', 'goggles' and 'ear plugs', with some workers having to wear 'special shoes' and 'finger protectors', depending on their position and on the task they had to perform.

The workers at Monty seemed to be very aware of the risks that they are exposed to. Several workers gave detailed and sophisticated descriptions of the accidents that they potentially could suffer that went far beyond the ones they had actually witnessed or suffered. This suggests that

[31] Interview with Mauricio Dzul (2003).
[32] Lic. Mena provided us with some leaflets.

workers had received a minimum induction or training that made them aware of the working environment and the risks that they are exposed to.

Most workers (43 per cent) referred to the possibility of 'hurting one's hand or finger with the sewing machine' and to the possibility 'of being hurt in the eye by a flying needle', but many also mentioned the dangers of 'inhaling' or 'being exposed to toxic substances', 'dust or tissue leftovers' (30 per cent). Some 11 per cent of the workers said that they were exposed to a variety of dangers such as 'being hit by heavy boxes', 'being exposed to loud noise for long periods of time', 'suffering an electric shock', 'muscular injuries' or 'the heat emanating from the ironing machines'. The remaining 16 per cent said they 'were not exposed to any danger at all'.

Only 23 per cent of the workers declared 'not to have received any training at all'. In contrast, 77 per cent stated that they had 'some sort of training' averaging a period of 1.3 months. Some workers (particularly the men working in 'laundry') receive more specialised training lasting three to four months (15 per cent of the total workers). In general, perhaps because men and women perform different tasks at the factory, men seem to receive more training than women (the average difference is two weeks), although that training generally does not last more than three months. Women performing tailoring tasks do not seem to need much training (one to two weeks only).

As expected, the training consisted mainly of learning 'how to use sewing machinery', 'ironing', 'separating clothes', 'folding', 'dying' and, in very few cases, more complex maintenance tasks and human resources management (quality control and supervision).

As for the additional activities taking place inside the plant, 90 per cent of the workers said that they had meals in the factory, some (18.5 per cent) mentioned recreational activities and parties (such as baby showers and Christmas celebrations). A few men (35 per cent) said they played in football tournaments and similar sporting activities organised by the management at Monty.

The average working day seems to last about 9 hours and 50 minutes (70 per cent of the workers declared this to be the case), most workers working nine, nine hours and forty five minutes or ten hours (26 per cent, 27 per cent and 20 per cent, respectively). Only ten per cent of the workers stated that they worked more than ten and up to 12 hours. These findings contrast with most of the literature on the garment maquiladoras of the north, where12 hour shifts are

said to be common. Assembly line workers work five days a week, in full compliance with Mexican employment laws, which Monty managers insist that they have always taken very seriously and are keen to respect.[33]

On the other hand, more than half of the workers (54 per cent) declared that they were 'not confident about keeping their job', which gives an idea of the instability associated with maquila employment, even in a remarkably stable maquiladora such as Monty. That finding is consistent with the evidence found in the literature and with the high turnover rates presented in the previous chapter.

However, 71 per cent of the workers declared that they did not know whether there were 'fixed' firing dates or periods, while the remaining 29 per cent suggested different possibilities. Some 14 per cent said that they believed there were cyclical firing periods, although workers proposed different time periods. Most indicated a month of the year, or a particular date, but the answers were inconsistent. Some workers mentioned June as a month susceptible to 'firings', whereas others mentioned May, April, January, December or simply 'once a year' or 'every five months'. What this shows is that workers seem to be confused, apparently because firings are random (they actually occurred in times of economic contraction in the USA),[34] although they are not uncommon.

Seven per cent of the workers explained firing periods as being the result of a 'lack of material for work'. Only eight per cent perceived firings to be the result of 'low productivity', 'absenteeism' or 'a lack of discipline' on the part of the workers. Contrary to some of the claims in the early literature on the EMI, the perception of firings as being unjustified was not very common a[illegible] Monty workers.

More importantly, 56 per cent of the workers said that they had experienced a 'positive change in their life' since they had engaged in factory work. Some 37 per cent did not characterise the changes in either a 'positive' or a 'negative' way, but rather remained indifferent; whilst only seven per cent described the changes to their lives as 'negative'.

Of those who described the change as positive, 52 per cent referred to an increase in their spending capacity. Apparently, their work at Monty enabled them to improve their material

[33] Interview with Lic. Mena (2003).
[34] Verbatim.

living conditions. 'Getting more household appliances', 'moving out from their parent's house', or 'getting more money for personal expenses', were the most common responses. Some 33 per cent of the workers referred to changes in their personal lives, such as 'improved social relations or personal skills' and 'an increased sense of independence'. Some 13 per cent did not specify in what sense their lives had improved, they just said that their work at Monty had led to positive changes, and only two per cent mentioned 'distance' as a positive aspect of work at Monty.

Of those workers with a negative perception of the changes brought by factory work, 64 per cent perceived work at Monty to be 'too demanding', 11 per cent mentioned that they had 'less time for their families' or 'themselves'. The remaining 8.5 per cent stated that working at Monty put 'pressure on their lives', another 8.5 per cent said that they 'depended more on money' and six per cent did not specify in what way those changes were negative.

The answers seem to have varied slightly according to gender and suggest that inexperienced workers (or those whose first job is at Monty) perceive factory work as 'more positive'. Men emphasised they 'were able to marry' and 'get a house', whereas women, in general, mentioned that they were 'more independent' and 'had more money to spend on personal items'. One factor that stands out is that both men and women stressed that work at Monty allowed them to 'socialise' and 'meet people', which is an important factor often mentioned in the literature (Fernández-Kelly, 1983).

Perhaps not surprisingly, 62 per cent of the workers — regardless of their gender or civil status — declared themselves 'to be proud' of working at Monty, while 12 per cent declared themselves 'not to be proud' and the remaining 26 per cent remained 'indifferent'. Those workers who said they were proud were not of any particular age, sex or civil status.

In accordance with Mr. Castillo's account of the adjustments that had to be made for the Programme for Employment to succeed ('celebrations' were moved from Sundays to Fridays), 48 per cent of the workers said that they drank no alcohol 'at all'. It would appear that a new discipline regarding drinking habits has been successfully installed in the region and partially thanks to the Programme for Employment. Consistent with this hypothesis, 24 per cent of the workers said that they drank 'only occasionally', and 18 per cent stated that they drank 'only in parties or celebrations'. The remaining ten per cent declared that they drank 'very rarely'.

As expected, more men than women were declared to drink alcohol 'occasionally' (40 per cent of men compared to four per cent of women) and 'in important parties or celebrations' (18 per cent of men compared to 13 per cent of women). Surprisingly, 32 per cent of the men said that they 'did not drink ever', perhaps to emphasise that a lesson had been learned from the Programme for Employment.

Practically all the workers stated that they spoke Spanish 'at work', 'at home' and 'in the community' (95 per cent), barely five per cent stated that they spoke Maya with 'other community members', but rarely 'at home' or elsewhere. The pattern that emerges is that speaking in Mayan seems to be limited to very specific spaces and to particular social interactions with members of the community, rather than within the family or working environment.

Most Monty workers seemed to be indifferent to communal activities, with very few declaring themselves to be 'intensely involved in the community' (two per cent). Some 45 per cent of those interviewed said that they only participate 'when necessary'; around 30 per cent said that they participate 'occasionally' and 23 per cent said that they were 'not interested'. Most workers who were interested in communal activities said that these were mainly associated with their extended family, close relatives or neighbours, but rarely with other members of the community.

Conclusions

First, the households of Monty workers are large, usually extended, (semi-rural) families. This suggests that Monty employs young family members from the most deprived households in the region. As in the cities of the north, maquila employment in the ex-henequen region seems to be 'reserved' for young members of low income households. However, unlike the maquila workers of the north (who are usually urban workers), the workers at Monty are rural Mayas, who would otherwise cultivate the land, work as builders, or migrate to Cancún in search of a better job.

Thus, not surprisingly, most Monty workers' households have several income earners, in many cases with more than two members working at Monty. In fact, the households of Monty workers contain, on average two Monty workers, some having three or four, depending on the household composition and household life cycle.

It is clear that the families of Monty workers (like the families of maquila workers in northern cities) need several income earners to provide a more or less reasonable household income. Hence, any single (unmarried) adult of working age (16 years or over) is likely to be sent out to work, often at Monty. After all, the ex-henequen region was known to be among the most deprived regions of Yucatán for some time, and the state's minimum salary corresponds to the lowest regional minimum salary in the country (region C), according to the federal government's commission on minimum salaries.

The age structure of the Monty workforce indicates why Monty workers from the same family are brothers and/or sisters (or couples), but very rarely a father and son (or daughter). Furthermore, families with married Monty workers are often childless couples, while families with only one married Monty worker were usually 'nuclear patriarchal families'.

The family dynamics of the Monty workers suggest that women only work when they are single, and later, when they have raised children; but they normally work only when the family has a very low income, and thus few income earners. The married women working at Monty were all married to an employed man and were significantly rarer. Older men usually work in agriculture (or elsewhere), regardless of the number of children that contribute to the household income.

The survival strategies of low income households seem to promote work (at Monty) among several young (single) family members, and prevent young married couples (usually a male Monty worker and his wife) from leaving the parental home until they have consolidated their economic situation. That explains the relative abundance of large extended families among single and married workers, but also the presence of small nuclear families, particularly among young married workers.

The households of married and single Monty workers do not earn the same amount of money. The differences in earnings are explained by differences in family composition, the differences in earning potential between experienced and inexperienced workers and by the fact that single workers usually keep half of their money for personal expenses. In fact, the total income of single Monty workers' households was estimated to be in the order of four minimum salaries (on average), while the total income of married worker's households was estimated to be around five minimum salaries (on average).

Given that the average household income in the region is 3.1 minimum salaries, the estimates presented in this chapter place the earnings of Monty workers (of 3.5 minimum salaries on average) slightly above the average regional household earnings. Considering that the state government of Yucatán set the poverty line at two minimum salaries per household, Monty workers' household have clearly escaped poverty (according to that definition). It is important to bear in mind though, that a few households were composed of one sole Montv worker (often a married woman or a single worker) and several men working in agriculture. Average can thus be slightly misleading.

What is more, the literature suggests that one minimum salary in 1991 (before the crisis of 1994) could only pay 19 per cent of the total expenses generated by a family. In other words, low-income families would need at least five minimum salaries to satisfy their basic needs. Thus, many Monty workers and families in the ex-henequen region would still be below the poverty line according to this criterion.

Monty seems to pay an average salary to experienced workers. For inexperienced workers, it pays better than average salaries. What this shows is that Monty (still) relies on a vast, inexperienced, labour force that is very willing to work at Monty — presumably given the limited employment opportunities elsewhere, and certainly because Monty offers them a better salary. For those who have worked before, the 'other extra benefits' that Monty offers (such as proximity to work and other 'extra' monetary benefits) offer important reasons to work at Monty instead of taking a job elsewhere.

In any case, there is little doubt that households' in the ex-henequen region have significantly improved their economic situation since the Programme for Employment was launched. Although INEGI censuses do not allow further comparisons, the ex-henequen region is no longer among the most deprived in the state — according to CONAPO classifications. In fact, the ex-henequen region ranks as 'moderately marginal', showing that maquila employment has alleviated the situation considerably; but how much more the economic situation in the region will improve is yet to be seen.

After all, the EMI, in all its phases, seems to have employed young workers who will work for limited and sporadic periods of time, and can be paid low wages. What maquila employment has done for low income families is to allow them to survive, but very rarely has the EMI allowed them to save money or significantly improve their living standards. What is more, the

EMI in the ex-henequen region seems to have reached a period of maturity, and appears to be consolidating as an attractive source of employment, particularly for families with several potential income earners.

Analysis of Monty workers' households show that households' survival strategies in the ex-henequen region seem to have adapted very well to maquila employment, while (in general) maintaining a traditional patriarchal family composition and structure. However, it was not unusual to find couples working at Monty and these seem to be a 'new' kind of family in the region. When wife and husband work at Monty, they more usually take the economic decisions of the household together and both earn money. In opposition to the majority of traditional patriarchal families in the region — and among Monty workers, the presence of couples working at Monty suggests that a transition in family dynamics might be underway.

Perhaps in the future, childless couples working at Monty and small nuclear families (with shared headship) might become more common than the traditional (large, extended) patriarchal family. In addition, given that married workers usually work for longer periods of time than single workers, it is likely that the turnover at Monty will be more controlled in the future.

Undoubtedly, an increase in earning capacity and the experience of working in a factory is a source of pride for most Monty workers. As we have seen, even though most of the Monty worker's income is spent on food, followed by health and clothing, Monty workers' houses are relatively well equipped. Like maquila workers in the north, maquila workers in the south seem to have a greater spending capacity than other low income households, which in case of crisis is not necessarily a good thing. In any case, most Monty workers seem to rely on agricultural activities to complement family consumption, and seem to be willing to continue to rely on such activities in the future.

Chapter Eight

THE ENVIRONMENTAL IMPACT OF MONTY AND THE MEXICAN GOVERNMENT APPROACH TO SUSTAINABLE DEVELOPMENT

Introduction

It is generally acknowledged that the implementation of neoliberal policy worldwide has had mixed results, particularly in LDCs (US Agency for International Development, 1998; Föster and Pearson, 2002; WB, 2006; Gilbert, 2007). Development policy was left to the forces of the market, and thus, government developmental policy changed. In the redefinition of the roles that private companies and governments should play in society, emphasis is placed on the administration of goods and consumer services, relegating government policy and 'national' interests to second place.

Generally speaking, even if many Latin American countries have reacted fiercely against neoliberal doctrine (for example, Venezuela, Bolivia and Ecuador); most have been re-shaping their economies according to the principles of neoliberalism for more than a decade (Gwynne and Kay, 2004). From the sustainable development perspective, neoliberalism seems to have had very limited results thusfar.

In the Mexican case, although Mexico is considered a middle-income country and is part of the OECD, income polarisation there is among the highest in the world (Föster and Pearson, 2002; OECD, 2007). Too many households are considered to live in (urban or rural)[1] poverty (World Bank, 2002; Chant, 2004; González de la Rocha, 2006). Underemployment and unemployment seem to be greater than the official statistics usually show, and the informal (often criminal) economy has continued to grow (Chant, 2004; Parrado, 2005). Far from modernising, Mexican industry has succumbed to the US competition and small-scale agriculture only acts as a buffer in coping with poverty and unemployment (Goldrich and Carruthers, 1992; Barkin, 1998; Kelly, 2001; Kay, 2004). Very few Mexicans seem to have profited from neoliberalism, but those who have, clearly consolidated their position in the worldwide economy.

[1] In 2002, around 34 million Mexicans living in cities were considered to be poor (seven million extremely poor, 27 million moderately poor) (World Bank, 2002). 'In 2002, 35 per cent of rural dwellers were extreme poorly and 67 per cent moderately poor'(World Bank, 2002).

What is more, the promised gains from NAFTA have been very limited thusfar, and it is unlikely that they will ever materialise (Robertson, 2000; Ochoa and Wilson, 2001; Cypher, 2001; Salas, 2001; Gwynne and Kay, 2004; Parrado, 2005; Morris and Passé-Smith, 2007). Mexico's reliance on US imports, remittances from the USA and FDI is greater than ever (Sotelo, 2004). In the meantime, the Mexican government often claims to be engaging with sustainable development goals (as do the governments in many other developing countries). How should such claims be interpreted?

As we will see in this chapter, a relatively sustained effort has been made to consolidate and develop government environmental institutions, particularly at the time when NAFTA negotiations were envisaged and shortly after NAFTA was signed (Mumme, 1992; Gilbert, 1994; Mumme and Duncan, 1998; Marchack, 1998; Grossman, 2000). Although the 1995 economic crisis considerably constrained the budget allocated to the environment — and it has never since fully recovered — a number of environmental protection policies have been implemented (Logsdon and Husted, 2000).

Therefore, it is clear that Mexico's approach to sustainable development is understood in terms of the protection of the environment (to a large extent based on corporations' self regulation, of course), while exports have been promoted (mainly manufactures from the maquila and oil). Such an interpretation of sustainable development is totally in keeping with the mainstream approaches to sustainability promoted by OECD members. But, given the persistent environmental deterioration (along the northern border and throughout most of the country) and the limited economic and social gains, it is interesting to explore further how Mexican officials defend or justify government policy.

As we have seen, the Monty case illustrates well the type of project that the NEM can offer to a state like Yucatán, and more particularly to a region like the ex-henequen region. In the previous chapters of findings I tried to illustrate the economic impact of the maquila on the ex-henequen region and the social impact of Monty. It remains to be seen how Monty has performed with regard to the environment and notably to illustrate the federal and state governments' approach to sustainable development — according to government officials themselves.

For instance, how have Monty industries performed from an environmental viewpoint? Have federal and state regulations been enough to assure 'first world' environmental standards? How

is the government file on Monty industries compiled? What criteria are used? How tight was its monitoring? More generally, what do environmental and development policy-makers at the national, state and local levels have to say about sustainable development in Mexico?

These are the questions this chapter will seek to answer. It is, perhaps, important to emphasise that interviews with SAGARPA, SEMARNAT, CNA and PROFEPA officials are the core data analysed in this chapter.

8.1 The Environmental Impact of Monty

8.1.1 Development Policy and the Protection of the Environment in Yucatán

One important aspect of Yucatecan industrial development policy is that it sought to concentrate polluting industries (including a few maquiladoras) in one of Mérida's industrial parks, and keep another industrial park solely for non-polluting 'industries' (Special Report, 1984; García de Fuentes and Morales, 2000).[2] The ex-henequen region would only host 'non-polluting' maquiladoras, thus eliminating the possibility that electrical/electronics, and certainly transport maquila activities, would be installed there.[3] These are known to be among the most polluting maquiladoras and are mainly located in the northern border cities (Perry et al., 1990; Bowen, Kontuly, and Hepner, 1995).

Therefore, since its inception, the Maquiladora Programme for the Ex-Henequen Region actually incorporated an important element of sustainability, notably the protection of the environment. As we already know, the development of the EMI in the north of the country was most certainly not accompanied by efficient environmental and urban policies (Young, 1986; Gilbert, 1994; García de Fuentes et al., 2000; De la O, 2000). Although the Yucatecan government was keen to avoid the errors of the north, there were also additional reasons why the government of Yucatán sought to keep polluting maquiladoras out of the ex-henequen region.

One reason was that state officials knew they could redirect polluting 'industry' to one of Mérida's industrial parks.[4] The industrial park reserved for polluting activities dates back to the

[2] Interviews with Lic. Jorge Torre, Lic. Marco Gutiérrez, Lic. Augusto Pérez and Ing. Janitzio Durán of the State Secretariat of Industrial and Commercial Development (2003), Mérida Yucatán.
[3] Op cit.
[4] Op cit.

1970s and is not used to its full potential.[5] A further reason that polluting industries were kept away from the ex-henequen region was that geological and climatic conditions there combine to produce a fragile environment. In addition, the natural environment is a key asset for tourism, the most important sector in the state's economy. Yucatán's limestone soil and underground 'interconnected watercourses' make it very easy for vast stocks of water to be polluted. Although enough water is available,[6] that resource is naturally stored underground, for which reason it remains vulnerable to any polluting substances that can easily permeate through the soil.[7] The local government is aware of the potential dangers that those natural conditions imply and aims to control and monitor potential polluters. In fact, oil from cars and human waste are the two most significant water-polluting sources mentioned by several government officers.[8] Sea water is also a major potential polluter.[9]

Clothing maquiladoras are among the least polluting type of industry. As such, promotion of such companies was appropriate to the locality and also suited the female Mayan labour force with its traditional expertise in producing '*mantas*' and 'embroidered goods'. Government officers felt that it was appropriate to 'exploit the local knowledge' and thus 'promote the production of clothes for exports'.[10] Ironically, more men than women now work at Monty.

Further protection of the environment was afforded by the fact that the main input to Monty, denim, is imported from the USA. The Monty management assured me that the denim used in their production processes was not produced in Mexico but that it came from Asia.[11] It is known that US environmental regulations incurred considerable production costs, for which reason the production of denim was transferred to China, India, Turkey and, initially, Mexico.[12] Lic. Marco Gutiérrez of the State Secretariat for Industrial and Economic Development confirmed that most of the textiles used by the clothing industry in Yucatán were produced in Asia.[13] Thus, even though the assembly of clothes at Monty is relatively non-polluting, the production of denim, transportation of inputs to Mexico and the subsequent exports of jeans to the USA certainly entail considerable environmental costs — that I do not intend to measure here.

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[5] Interviews with Lic. Jorge Torre and Lic. Marco Gutiérrez (2003).
[6] Rain water in the peninsula is sufficient to replenish water stocks, in part given the extremely high permeability of the soil.
[7] Interviews with Lic. Jorge Torre, Ing. Marcos Poot (CNA), Msc. Tamayo (SEMARNAT), Dr. Luis Balam (PROFEPA) and Msc. Valldares (State Secretariat of Ecology) (2003), among others.
[8] Interviews with Ing. Marcos Poot and Dr. Luis Balam (2003).
[9] Interviews with Ing. Marcos Poot and Msc. Valladares (2003) among others.
[10] Interviews with Lic. Jorge Torre and Lic. Marco Gutiérrez (2003), principally.
[11] Interview with Lic. Mena (2003) and Lic. Macrco Gutiérrez (2003).
[12] See http://www.just-style.com/store/product.aspx?id=26022andlk=nd02 for more detail.
[13] See http://www.articleclick.com/Article/Global-Jeans-and-Denim-Fabrics-Market/2010 for more detail.

The key aspect of the clothing maquila industry (for state authorities) is that it does not use hazardous materials in its production processes nor does it involve significant combustion activities or produce particularly hazardous waste.[14] Most polluting maquiladoras use: '1) a wide range of solvents (i.e., 1,1,1-trichloroethane, acetone or methylene chloride); 2) acidic and alkaline substances (i.e.; sulphuric and hydrochloric acids or sodium hydrate); and (3) heavy metals (i.e., lead, nickel or copper)' (Perry, Sanchez, Glaze, and Mazarp, 1990: 443).

Although the basic input to Monty does not create any pollution, some of the company's production processes do. Two processes, decolouring and tinting both produce waste. De-colouring the jeans (apparently an indispensable fashion requirement) is achieved through 'sand-blasting'.[15] This process uses considerable amounts of water and the waste water is coloured deep blue.[16] Chemical remains from tinting the jeans are in the form of blue indigo powder.[17] The powder is put in plastic bags before it is periodically thrown away in the municipal waste dump (see appendix p. 384 for a photo of indigo powder).[18] Cloth remnants and human waste (of all kinds) are also major potentially pollutant residuals from Monty's activities. These are also periodically thrown in an open-air waste dump. Motul's waste dump is not subject to any environmental regulation and is located close to residential areas.[19]

8.1.2 Government Monitoring of Monty

Under Mexican environmental law, some environmental agencies operate under federal jurisdiction (SEMARNAT, PROFEPA and CNA) and others operate at the state and local levels (State Secretariats of the Environment and municipal governments, respectively). SEMARNAT is responsible for drawing up the law (notably the Mexican environmental norms) designing environmental policy and for monitoring federal environmental resources and territories. Through state representations, SEMARNAT is responsible for monitoring the production, use, treatment and disposal of hazardous waste materials. These fall under federal jurisdiction due their dangerous nature. Given that water is considered a federal resource, the CNA is responsible for monitoring water extraction and consumption as well as waste water disposal

[14] Interviews with Ing. Alfonso Domínguez, Ing. Larry Yah, Anthrop. Carlos Medina, Msc. G. Valladares and several officials of the State Secretariat for Industrial and Commercial Development (2003)
[15] Interviews with Biol. Magaly Moo, Ing. Luis F. Guillermo, Lic. Mena, Anthrop. Carlos Medina and Msc. Valladares (2003).
[16] Interview with Ing. Alfonso Domínguez (2003), director of Environmental Impact at Semarnat-Yucatán.
[17] Interview with Anthrop. Carlos Medina (2003).
[18] Interviews with Biol. Magaly Moo and Ing. Luis F. Guillermo (2003).
[19] Op cit.

techniques and sites. PROFEPA penalises agents that do not comply with the Mexican environmental norms, and has the responsibility to follow up on citizens' environmental complaints.

In turn, state environmental agencies are responsible for authorising industries to operate. Their decision is based on an appraisal of the 'Environmental Impact Study' presented by all companies that wish to operate in the state. 'Environmental Impact Studies' are regulated by the SEMARNAT and are generally carried out by private (Mexican) consultancy firms.[20] It is the responsibility of the state environmental agencies to ensure that industries operate in accordance with the Environmental Impact Study that they initially presented. Therefore, periodic visits and monitoring of those industries is commonplace. On the other hand, local governments (municipalities) are responsible for collecting, treating and depositing non-hazardous waste (so-called 'solid municipal waste'). The degree of danger represented by the waste is determined by CRETIB[21] analyses — also usually undertaken by private firms or university departments.

In the case of Monty, the relatively recently created Secretariat of Ecology (1989) for the state of Yucatán was responsible for authorising Monty to install and operate in the state. The State Secretariat of Ecology also monitors Monty's atmospheric pollution and water contamination levels, given that these are not 'particularly' polluting.[22] SEMARNAT-Yucatán monitors Monty's 'scarce' hazardous waste, which is mainly in the form of oils and greases from its machinery. CNA-Yucatán monitors water consumption and waste water disposal. PROFEPA-Yucatán is responsible for responding to citizens' complaints and for sanctioning Monty if any of the Mexican norms are violated.

Interviews with the heads of the department of Environmental Control, Environmental Prevention and Environmental Management of the State Secretariat of Ecology[23] made it clear that state and federal environmental agencies were familiar with the Monty plant. Not only was Monty one of the pioneering firms that presented 'all the required documentation before

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[20] Interviews with Msc. Valladares, Anthrop. Carlos Medina, Lic. Alfonso Domínguez and Msc. Tamayo (2003).

[21] The distinction between hazardous and non-hazardous waste is very important because it determines the different legal responsibilities and competencies of government agencies to collect, treat and dispose of waste. CRETIB refers to the chemical and physical properties of the waste. In Spanish it is: *Corrosivo, Reactivo, Explosivo, Tóxico, Inflamable, Biológico infeccioso*. These categories are similar to those used by the EPA in the USA, with the only exception that Mexican legislation added biological infectious waste (see Kopinak and Barajas, 2002: 223).

[22] Interviews with Ing. Larry Yah, Anthrop. Carlos Medina and Msc. Valladares (2003).

[23] Ing. Larry Yah, Anthropologist Carlos Medina and Msc. Guadalupe Valladares, respectively.

installing', but it was also a very large plant that grew significantly and developed its industrial activities in a short period of time.[24]

Monty, like all industries in the state, submitted an 'Environmental Impact Study' to be granted permission to operate. It also periodically (every six months to one year) submits records on: 1) its atmospheric emissions; 2) quantities of 'solid' and hazardous waste; 3) the amount of water consumed; 4) levels of contaminated water; and 5) water disposal techniques and volumes.[25] Thus, all industrial activities performed at Monty have to be reported and evaluated; for which reason the Secretariat of Ecology, as well as the SEMARNAT and the CNA are familiar with Monty's industrial processes and the potential risks that Monty presents.[26] Monty's cloth leftovers, 'blue dust bags' and human detritus are not considered hazardous materials according to the Mexican norms. These are considered to be solid municipal waste, and thus have to be 'treated' by the local government.[27]

8.1.3 Interview Data and the Environmental Performance of Monty

Ing. Larry Yah, head of the department of Environmental Control for the State Secretariat of Ecology,[28] informed us that air pollution had increased significantly in the state as a whole, but mainly in Mérida and greater Mérida. Although Monty — together with Lee Corporation — were the major air polluters in the ex-henequen region,[29] their emissions of suspended particles had always been within acceptable levels according to the Mexican norms (that is below 260 µg/m3 in 24 hours, and below 75 µg/m3 on average per year).[30]

On just one occasion was a construction company 'called to attention' for not presenting a record on their emissions. After carrying out an evaluation themselves, the State Secretariat of Ecology sent out 'a recommendation' to that company. [31] A factory has never been sanctioned for polluting the atmosphere. [32] But perhaps this should not be surprising, given the relatively limited industrial activity carried out in Yucatán. In fact, around 70 per cent of the atmospheric

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[24] Interviews with Ing. Larry Yah, Anthrop. Carlos Medina and Msc. G. Valladares (2003).
[25] Interviews with all the staff working at the State Secretariat of Ecology and Msc. Tamayo (2003).
[26] Op cit
[27] Interviews with Ing. Luis F. Guillermo and Biol. Magaly Moo (2003).
[28] He is directly responsible for monitoring the volumes and types of atmospheric emissions (of cars and industry) in the state.
[29] Considerable amounts of vapour are needed to wash and iron the cloth (Interview, Ing. Larry Yah 2003).
[30] See http://www.sma.df.gob.mx/simat/proteccion/(ante)nom-024-ssa1-1993.pdf for more detail.
[31] Interview with Ing. Larry Yah (2003).
[32] Op cit.

pollution comes from motor vehicles. The remaining 30 per cent comes from (mainly local) industries, of which 80 per cent are monitored by the State Secretariat of Ecology, given their relatively low levels of polluting emissions.[33] [SEMARNAT-Yucatán is in charge of monitoring the remaining 20 per cent of industries, which emit higher concentrations of air pollution. Most of these industries are located in one of Mérida's industrial parks.] [34]

The anthropologist, Carlos Medina, head of Environmental Prevention at the State Secretariat of Ecology, very clearly specified that one of their responsibilities was to monitor the quality of the water discharged by the maquiladoras. They basically have to make sure that 'the water contamination is within the limits laid down by the Mexican regulations on residual waters'. In cases of violation, they would notify the PROFEPA and the CNA and ask them to intervene.[35] Mr. Medina could not comment in any detail about Lee's or Monty's environmental performance because 'he did not have the required information at hand and did not want to be imprecise.'

On the other hand, according to Msc. Guadalupe Valladares, head of the Environmental Management office of the Secretariat of Ecology, Lee Corporation seemed to pollute water on a significantly larger scale than Monty. The contamination indexes of these two companies differed greatly. However, Msc. Valladares explained: 'Lee Corporation have brought state of the art technology to treat their residual waters and thus fully comply with the Mexican environmental norms. Lee uses the most advanced techniques to treat contaminated water, to the extent that the water they have treated is even cleaner than the water that they initially used.' Unfortunately, Msc. Valladares did not 'remember' whether Monty also needed to treat their residual waters or even whether 'they had a water treatment plant'.

However, Dr. Luis Balam, director of industrial monitoring at the PROFEPA, let us know that 'a few years ago' Motuleño locals made a complaint against Monty for throwing 'clearly' polluted water into 'one of their wells'. PROFEPA and CNA personnel went to inspect the Monty installations. Both issued a series of recommendations that were 'taken very seriously' by the Monty administration. Dr. Balam did not seem to assign much importance to the incident, but rather concentrated on the fact that Monty followed government guidelines — which he did not specify in any detail. The extent to which Monty polluted the underground watercourses and the magnitude of the pollution was not specified either. To find out more

[33] Op cit.
[34] Op cit.
[35] Interview with Anth. Carlos Medina (2003).

about Monty's records on water consumption and waste water disposal I had to interview CNA officials.[36]

Ing. Marcos Poot, head of Planning at the CNA, remembered the Monty case. He acknowledged that after PROFEPA's intervention (in 1995) the CNA was requested to verify Monty's waste water deposits. In fact, the water that Monty was throwing into 'one of their receptive wells' was contaminated with hazardous materials. Analyses demonstrated that the water used by Monty 'had a higher than acceptable concentration of chlorine.'[37] Therefore, before depositing that water, Monty had to treat it so that it would meet the standards laid down by the Mexican norm.[38]

As far as Ing. Poot could remember, 'Monty's operations were not stopped at any time. While they solved the problem, we could only make sure that the wells were deep enough, which they were; so that the contaminated water would not reach the upper layers of water stocks and cause problems for the consumers. It was not a major problem because Monty immediately reacted and changed their processes to respect the norms.' [39] Ing. Marcos Poot ended by saying that the CNA had fined Monty on two occasions; once 'for not reporting the extraction of additional volumes of water', and the other, 'for not asking for permission to build a second series of wells to deposit waste water.' Ing. Poot agreed to give me part of Monty's file on water permits.

Ing. Luis F. Guillermo, head of the Office for the Integral Management of Hazardous Waste at SEMARNAT-Yucatán, told us that the hazardous waste produced by Lee and Monty was mainly in the form of 'oils' and 'greases' used to lubricate their machinery. Apparently both Monty and Lee had satisfactorily complied with the Mexican environmental norms thusfar. However, one of the strangest incidents he had experienced in his career involved Monty industries.

After a series of complaints to the PROFEPA in 2001, Ing. Luis F. Guillermo was sent by the state delegate of the SEMARNAT to take a look at Motul's waste dump. He told us this about the incident: 'Apparently something peculiar was going on there. When I got to the waste dump I could not believe what I saw. Bear in mind that the municipal waste dump in Motul is one of the largest we have around here. It all looked like the moon. A vast area was tinted blue. The

[36] Interview with Dr. Luis Balam (2003).
[37] Interview with Ing. Marcos Poot (2003).
[38] Op cit.
[39] Interview with Ing. Marcos Poot (2003).

whole municipal waste dump was covered with a blue dust. "This is really terrible," I said to myself, I was really concerned. I could see enormous plastic bags eroded by the heat of the sun. They were all broken and the blue dust they contained spread as the wind blew. This is pollution in its highest manifestation I thought. That first impression really scared me.'[40]

Ing. Luis F. Guillermo personally reported the incident to the state delegate at the SEMARNAT. In his own words: 'I told my boss: "listen, this is really serious, we are in deep trouble here, the waste dump is seriously contaminated; I do not know how we could have allowed this to happen".'[41] The Monty managers were called on immediately to give an explanation. The Monty lawyers brought all the documents they had on the chemical analyses of their 'solid waste'.[42] CRETIB analyses confirmed that the 'blue dust' was not hazardous waste 'but only tri-oxide of Zinc (O3 Z)'.[43] This type of pollution 'is not toxic, but mainly visual — and potentially atmospheric.'[44] For that reason, the local government was handed responsibility and immediately initiated negotiations with the managers at Monty. [45] In the short term, Monty had to make sure that the bags containing the 'blue dust' would be resistant to the heat of the sun. In the long term, a sanitary waste dump was envisaged. According to Ing. Luis F. Guillermo, part of the costs of building the sanitary land-fill site were going to be paid by Monty.

8.1.4 The Government Files on the Monty Plant

Although the interviews with state government officials provided very important information, the government files on the Monty plant were far more revealing. After several visits to the PROFEPA-Yucatán, I was finally granted permission to look at part of Monty's file. Apart from the citizens' complaints regarding 'Monty's contaminated-water-deposits' and solid waste, Monty had been involved several times in irregularities regarding their disposal and treatment of industrial oils and grease. This is a particularly sensitive issue for the authorities, given that just a litre of oil can contaminate one thousand litres of drinkable water.[46] In addition, the permeability of the soil makes it an extremely delicate matter.[47] Hence, PROFEPA and SEMARNAT are keen to check all the records that 'targeted industries' have to submit to prove that they are dealing with their hazardous waste properly. As a general rule, most industries

[40] Interview with Luis F. Guillermo (2003).
[41] Op cit.
[42] Op cit.
[43] Op cit.
[44] Op cit.
[45] Op cit.
[46] Interview with Ing. Marco Poot (2003).
[47] Op cit.

using industrial oils and greases have to report these and stock their waste under certain conditions for subsequent collection by specialised (private) hazardous waste management firms.[48]

According to the PROFEPA documentation, a series of inspections were carried out in 1995 and 1996, around a year after Monty started to operate. Monty did not report the use of oils and greases and, more importantly, failed to prove that the storage of those oils and greases complied with the Mexican environmental norms. Although the documentation does not mention how the oils and greases were treated, Monty was urged to: 1) register as a producer of hazardous waste; 2) immediately build an area for storage in accordance with the Mexican regulations; 3) bring up to date the records on the amounts and types of oils and greases they use; 4) collect all the receipts from the companies collecting the waste; 5) submit copies of those documents on a regular basis to the SEMARNAT; 6) flag up and change practices with regard to refilling gasoline containers; and 7) present a risk study to the PROFEPA.[49] This series of resolutions was implemented in 1996 and 1997, 'shortly' after Monty was called to account.[50] However, in January 2003 Monty failed to provide the receipts for hazardous waste collection, for which reason PROFEPA had 'an open case' against Monty at the time that I left Yucatán.[51]

Even if it remains unclear how Monty treats the industrial oils and greases that are used in its operations, for at least one year, we know that PROFEPA eventually took notice and called Monty to account. The damage to the environment caused by such negligence is unknown, although we do know that Monty eventually came under stricter surveillance.[52]

The CNA documentation provided by Ing. Poot was also very revealing. First, Monty engaged in the proper administrative paperwork with the CNA only after they had built (and used for some time) two 'deep wells' to extract water and five 'receptive wells' (for contaminated water).[53] The authorisation to continue using that infrastructure was given in October 1996 by the CNA. [54] In December 2001, Monty, again, asked for permission to operate two additional deep wells for water extraction and five additional wells for waste water deposits, which were

[48] Interview with Ing. Marco Poot (2003).
[49] Official PROFEPA documentation on the Monty file
[50] Op cit.
[51] Op cit.
[52] Interviews with Ing. Luis F. Guillermo, Dr. Luis Balam and Ing. Marcos Poot (2003).
[53] Official CNA documentation on the Monty file
[54] Op cit.

already built and in use.[55] In both cases Monty regularised its situation only after paying a rather small fine (around US$6000) and after 'illegally' using the wells for some time.[56] At no time were Monty's activities stopped.[57]

Monty's 'first' water permit granted them the right to use 432,000 cubic metres of water per year for 25 years.[58] That right was extended to 908,000 cubic meters per year in December 2001. Similarly, in 1996 Monty was authorised to deposit 212,000 cubic metres per year of waste water. That amount was increased to 544,000 cubic metres per year in December 2001.[59] In 2003, Monty was operating four wells for water extraction and ten wells for waste water deposits.[60] The technical conditions for water extraction, waste water deposit and the levels of contaminated water seemed to be within the parameters set by the Mexican environmental norms. No mention of Monty's higher than permitted concentrations of chlorine was made in these documents, or of how they eventually solved that problem.[61]

Most of the officials interviewed did not know for sure whether Monty had a water treatment plant (like Lee). Only Dr. Luis Balam vaguely mentioned that 'he thought' Monty had a treatment plant, a story that was denied emphatically by Ing. Poot and partially by Msc.Valladares. In fact Monty still has no water treatment plant until this day.[62] Apparently, Monty use part of the clean water that they extract to mix with the contaminated water and, thus, dilute the chlorine to an acceptable concentration level. Water in Yucatán is quite cheap,[63] treatment plants are not.[64] Moreover, such practice seems to be relatively common in certain industries, particularly when enough water is available.[65]

Add to the PROFEPA and CNA environmental files, those from the director of municipal services of the local government of Motul, Biol. Magaly Moo Pech handed me information on the municipal waste dump. In an informal interview, she confirmed Ing. Luis F. Guillermo's story, and informed me that Monty had been packing their 'zinc trioxide' in suitable bags since that time. However, those bags remain exposed to the atmosphere, for which reason the problem

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[55] Op cit.
[56] Op cit.
[57] Interview with Ing. Marcos Poot (2003).
[58] Official CNA documentation on the Monty file
[59] Official CNA documentation on the Monty file.
[60] Opcit.
[61] Op cit.
[62] Personal communication with Monty managers (2007).
[63] Interview with Ing. Marcs Poot (2003).
[64] Interview with Msc. G. Valladares (2003).
[65] Interview with Dr. Richard Taylor, Department of Geography, UCL (2002).

is only partially resolved. In fact, Biol. Magaly Moo recognised that she had a great responsibility. Since the PAN won the election and she was offered the position that she now occupies, she knew she had 'loads of things to do'. It is common knowledge that Motul's waste dump has deteriorated dramatically since Monty installed. Several Motuleños living south west of the city centre have complained about the waste dump for a long time.[66] Although the area next to the waste dump is not densely populated, several families do live there. Not only have the families living on the other side of the road, next to the waste dump, complained, but also people living in more distant neighbourhoods.[67]

Strong winds carried the volatile particles of zinc trioxide a considerable distance away from the waste dump.[68] More importantly, winds also bring very bad odours.[69] Biol. Moo insisted that she was more concerned by the amount of faecal and urinary waste concentrated in the waste dump than by any other contaminant (the airborne particles of zinc trioxide were controlled by that time). She made it clear that receiving faecal and urinary waste (from Monty industries) was not the usual function of the municipal waste dump. People in most of rural Yucatán use latrines that are 'sealed' once they are full and a new one is rebuilt a few metres away from the previous one.[70] Very few houses and government buildings in Motul empty their latrines and treat such waste — and none concentrates as many workers as Monty does. Latrines are usually emptied by state government personnel and the water is treated elsewhere.[71] However, given the amount of people working at Monty, the company had to apply a different system. They periodically empty their latrines and dump the waste in the municipal waste dump.

Mexican law seems to give Monty that right, although faecal and urinary waste could be considered biological-infectious waste, and thus could well fall into the category of hazardous waste. If that was the case, all faecal and urinary waste in the state would have to be treated as hazardous waste. That, of course, is not the case, but state agencies place particular emphasis on the potential contamination such waste can cause to subterranean waters.[72] A solution at the state level is still in the design phase, and as Mérida (and other tourist resorts) grows, the state

[66] Interview wit Magaly Moo (2003).
[67] Op cit.
[68] Op cit.
[69] Op cit.
[70] Interview with Magaly Moo (2003).
[71] Interviews with Ing. Marcos Poot and all interviewees working at the SEMARNAT-Yucatán (2003.
[72] Op cit.

authorities are increasingly concerned to provide a 'real', 'long term' 'infrastructural' solution to this serious problem.[73]

Certainly, the prior local administration of the PRI (under the administration of Mr. Luis E. Castillo) did not take the necessary precautions to provide a solution to Monty's human waste. Perhaps the lack of industrial experience in the region and Monty's unexpected growth prevented the local authorities from envisaging such a concentration of employees and human waste.[74] After all, the scale of Monty's operations is huge and the Monty plant grew at impressive pace. During my visit, the PAN administration complained in the sense that the PRI did not anticipate any long-term solutions to this crucial aspect of the maquila in Motul. 'If more information had been shared in the past, perhaps more measures would have been taken to avoid finding ourselves in the situation we are-in at this time.'[75]

Data on the volumes and types of waste show that Monty is, in fact, one of the major producers of waste in the ex-henequen region, followed by waste from houses and markets (see Table 8.1). Monty's waste is mainly in the form of cloth remains, zinc trioxide, pumice stone (used in the 'sand-blasting' process) and human waste (so-called 'mud') (Table 8.1).[76] At that time, the PAN administration was only able to 'control' the waste thrown in the municipal waste dump. It was under their administration that 'checks' and controls on the types and volumes of waste became common practice from October 2001.[77] However, Motul's waste dump remains an 'open air' waste dump, without any anti-contamination infrastructural device. It is what the authorities call a 'controlled, open-air waste dump'.[78]

[73] Op cit.
[74] Mr. Castillo, Biol. Magaly Moo and Lic. Mena (2003) admitted that the size of Monty exceeded everyone's expectations.
[75] Interview with Biol. Magaly Moo (2003).
[76] Op cit.
[77] Interview with Biol. Magaly Moo (2003).
[78] Interview with Biol. Magaly Moo (2003).

Table 8.1 Statistics on the Municipal Waste Dump in Motul (Types and Volumes of Waste).

Producer	Monty				Markets	Flea market	Houses	Parks	Other
	Pumice stone m^3	Zinc Trioxide Kg.	Cloth leftovers Kg.	Mud L.	Solid municipal waste Kg.	Solid municipal waste Kg.	Solid municipal waste Kg.	Solid municipal waste Kg.	Solid municipal waste Kg.
Oct.-2001	52500	79000	217500	327000	133000	1700	64375	4740	35000
Nov.-2001	18560	37500	174000	309000	47500	3100	89220	2810	13450
Dec.-2001	34500	32200	121703	1E+06	57700	800	125280	4850	7070
Jan.-2002	56	13104	322.5	94000	58300	32	127850	3640	10130
Feb.-2002	98	14000	323	408000	102300	5032	112800	6500	13950
Mar.-2002	187	31500	418	32000	78300	483.5	256550	5050	14115
Apr.-2002	6042	n.a.	318	810000	n.a.	2	71500	n.a.	n.a.
May.-2002	114	14000	373	773000	600	n.a.	19000	400	n.a.
Jun.-2002	18288	24500	566	1E+06	21600	37	122012	6600	2900
Jul.-2002	213	20000	288	294000	25000	n.a.	258012	300	4800
AVERAGE	**13056**	**29534**	**51581**	**530060**	**58256**	**1398**	**124660**	**3877**	**12677**

Source: Biol. Magaly Moo, local government official (2003)

Perhaps to show me that the PAN administration did not ignore this problem, Biol. Magaly Moo invited me to a meeting with several municipal presidents from the region to discuss the building of a land fill site. The meeting was in the form of a presentation from a private (European) company that sold environmental services. Some ten municipal presidents of neighbouring municipalities were present to hear the company's tender. The building of the sanitary land fill was envisaged within five to seven years from 2003, which is more than ten years after Monty started to operate in Motul. Biol. Magaly Moo refuted the idea that Monty was going to contribute the expenses needed to build the sanitary land-fill, but instead several municipalities were invited to take on part of the project and, thus, are likely to pay part of the costs.

8.1.5 Interpreting the Interviews and Government Files on the Environmental Impact of Monty

Although state authorities insisted that the Maquiladora Programme for the Ex-henequen Region was designed to avoid pollution, it is clear that Monty is far from being a harmless non-polluting plant. Given the size of the Monty plant and the amount of waste it generates, state and local authorities have been rather lenient towards the company. The most significant aspect is perhaps the fact that Monty was allowed to operate without the necessary permits with regard to the management and disposal of industrial oils and greases, but also with regard to water consumption and waste water treatment. Monty was negligent and presumably took advantage

of the situation. Usually, private consultancy firms are paid by the companies themselves to carry out periodic analyses to then be surrendered to the State Secretariat of Ecology for evaluation. When such analyses 'are not presented' or do not meet the stated requirements, state personnel pay a visit. Analyses of different kinds imply a cost that Monty avoided for some years. More importantly, Monty avoided constructing the necessary infrastructure to stock hazardous waste and did not pay for its collection for some time. Furthermore, Monty paid only 'minor fines' when called to account.[79]

The same goes for the CNA and the water permits granted to Monty. Although with some delay, Monty finally notified the authorities of the volumes of water consumed at the plant and water deposits they made. In this case too, it is impossible to know the amount of pollution caused by the depositing of chlorinated waters in deep wells — or for how long they continued with that practice. But given that no case of contamination and poisoning was mentioned, it is likely that the depth of the wells somehow ensured a minimum level of safety, just as Ing. Poot had suggested. In both cases, CNA and PROFEPA 'reacted' to correct problems that had been going on for some time and — in the case of polluted water and airborne particles of zinc trioxide — that had been noticed by local citizens.

Local authorities also had a 'corrective' attitude towards Monty. Motul's 'open air' municipal waste dump was clearly not suited to taking Monty's human and industrial waste. Trusting that CRETIB's analysis might be reasonable from the legal point of view, the fact that the new PAN administration engaged in building a sanitary land fill 'as soon as possible' shows how concerned local authorities are. It did not seem to be a major problem for Monty to change the packages that contained the zinc trioxide (blue indigo powder), but it certainly proved to be a temporary, short term solution.

In general, federal, state and local authorities seem to have been 'permissive' with the environmental practices at the Monty plant, but not necessarily compliant or negligent. The Monty case perhaps illustrates well Mexico's approach to industrial environmental regulation and monitoring (under the so-called 'Law Enforcement Mechanism'). On the one hand, industry appears to be allowed to install and operate relatively easily as long as an Environmental Impact Study is presented. On the other hand, state environmental monitoring and citizen's complaints are taken relatively seriously.

[79] Interviews with Ing. Marcos Poot and Dr. Luis Balam (2003).

As the interviews demonstrated, communication between agencies regarding Monty's environmental performance seemed to flow effectively. State and federal agencies reacted quickly to citizen's complaints and engaged in a proper monitoring. Although Monty was not severely fined at any time, nor obliged to stop their activities; a series of institutional recommendations and 'threats' did make Monty change some of their practices or at least regularise their situation. What this shows is that economic activity in the state of Yucatán seems to be prioritised over environmental regulations, and it would appear that governmental authorities try to make sure that companies feel relatively 'comfortable', but are not left 'un-watched'.

The representatives of Yucatán's environmental agencies often emphasised the need to 'invite' entrepreneurs to 'cooperate over the environment' rather than to 'oblige them' to change their production processes by 'sanctioning them'.[80] In many cases too much emphasis was put on the positive aspects of certain production processes that helped to care for the environment (so called 'success stories'), and only discrete mention was made of the problems.[81] Several times, interviewees emphasised Monty's quick reaction to solve problems, rather than the gravity of the problems or the risks such irregularities could have presented for local citizens. Perhaps quite significantly, most state environmental officials came from the private sector and were experienced in the management of industrial processes. To many, their experience in government 'was recent' and has allowed them 'to clearly see both sides of the problem'.[82]

In general, the case of Monty shows that government agencies are 'reactive' rather than 'preventive', and that significantly more environmental damage could have resulted if Monty had carried out more polluting activities. In sum, risk was not minimised to its lowest level.

What is more, Monty's self regulation could be called into question. Clearly, Monty engaged in building and using the infrastructure that they needed long before they notified the authorities. Perhaps in the knowledge that permits would be granted anyway — and fines were relatively low (otherwise Monty would not have repeated their misdemeanours twice), Monty ignored the legislation and paid little for it. It seems that Monty was driven by their need to grow and produce more jeans — which certainly implied more jobs — regardless of the legal requirements to comply with the Mexican environmental norms. Had it not been for the

[80] All interviewees from the State Secretariat of Ecology, SEMARNAT-Yucatán, CNA and PROFEPA (2003).
[81] Op cit.
[82] Op cit.

intervention of the State Secretariat of Ecology, the CNA and PROFEPA, perhaps Monty would have continued to operate as they did in the early years.

Perhaps such corporate (and institutional) behaviour should not be surprising at all. In fact, the Monty case actually provides empirical evidence to support Grossman's (2000) claims that TNCs tend to always take (economic and environmental) advantage when they can, particularly when local governments do not have enough capacity to enforce the law. More importantly, NAFTA agreements seem to have assured TNCs a legal framework that clearly subordinates environmental protection to economic growth and trade (Marchack, 1998; Grossman, 2000).

On the local government's part, it seems that only a major investment can solve Monty's waste management problems. Monty's human and industrial waste does not fall into the category of hazardous waste, for which reason the municipality has to deal with it. The amount of the investment needed to build a sanitary land-fill site certainly represents a considerable cost for the local authorities, a cost they cannot avoid.

What all this shows is that: 1) even the least polluting maquiladoras can be dangerously polluting; 2) state and local governments have to monitor maquiladoras' activities and invest in a minimal environmental infrastructure to prevent major environmental threats; 3) Environmental Impact Studies do not ensure that companies operate within Mexico's environmental norms; and 4) the penalties do not seem to be stiff enough to oblige industries to comply with the Mexican environmental norms once they go into operation, nor do they prevent industries from committing the same offence for a second time.

8.2 The State Government's Approach to Sustainable Development

Every economic policy-maker I talked to at the state level emphasised the need for state environmental controls. It was felt that all economic activities need to be properly regulated, monitored and sanctioned 'if needed'. The policy of encouraging clothing maquiladoras mainly, 'was an example of the state's concern for sustainable development'.[83] 'From the planning point of view, nothing more could have been done. It is the responsibility of environmental agencies

[83] Interviews with Lic. Jorge Torre, Lic. Augusto Pérez, Lic. Marco Gutiérrez and Ing. Janitzio Durán (2003).

to take care of the environment. We ["developers"] concentrate on the economy — that is, on generating investment opportunities for the state.'[84]

On the other hand, policy-makers were not aware of the potential environmental risks brought by a plant like Monty. Very few raised the most common (economic and social) concerns with regard to the EMI. Mr. Castillo was the only one to acknowledge that in many respects the installation of Monty was 'an experiment', and that 'adjustments had to be made as problems would appear '. He added: 'We did hear about the exploitation on the part of the northern maquiladoras, but in Motul we see things differently. Employees here are sons of *ejidatarios,* who need a job.'

It was very clear that Yucatán's henequen past was very much present in state and local development policy-makers' speeches and arguments. The idea that henequen workers have always earned a very low wage, and that they have always coped with poverty, seemed to be part of the state's identity.[85] To many interviewees, the prospect of bringing maquiladoras to the state was clearly an opportunity to create jobs, in the knowledge that those jobs would not necessarily improve things dramatically.[86] The quality of the jobs and the age and civil status of the workers to whom maquila jobs were going to be addressed was definitely not an issue.[87] More than once, maquila employment was compared with building or agricultural work, usually to signal that the job opportunities in the state were no better than maquila employment anyway.[88] The same was true for the salaries offered at the maquila and other local jobs.[89] The distinction between the northern maquila industry and the maquila in Yucatán was made mainly from the environmental perspective.[90]

Although most interviewees emphasised the prospects of linking the state's maquila activities with other economic sectors, they also acknowledge that this 'was not a reality yet'.[91] In fact, state policy-makers were pleased enough with the fact that the maquiladoras had brought jobs in transport, maintenance and security services.[92] Most of all, the port of Progreso was back in

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[84] Interview with Lic. Marco Gutiérrez (2003).
[85] Op cit.
[86] Interviews with Lic. Jorge Torre, Lic. Augusto Pérez, Lic. Marco Gutiérrez, Ing. Janitzio Durán, Arq. Carlos Medina, Ing. David Loria (2003).
[87] Op cit.
[88] Op cit.
[89] Op cit.
[90] Op cit.
[91] Op cit.
[92] Op cit.

operation and several roads had been built.[93] The state's investments in infrastructure from the mid-1980s had certainly 'paid off' with the arrival of the maquiladoras.[94]

To most interviewees, continuing to promote maquila activities was still the most viable option to improve the economy of the state, even though maquila work remained low-skilled, low-paid employment.[95] When it was argued that the maquila was of vital importance to improve the state's economy, the idea of development was understood mainly in terms of job creation. Policy-makers seemed to assume that the maquila was an enclave economy and that it should be openly accepted as such, although in the long term 'the idea was to introduce local inputs into the [maquila] productive chain and bring more modern, capital intensive maquiladoras'.[96]

The fact that the Maquiladora Programme for the Ex-Henequen Region was unanimously seen as a success (by state policy-makers, local officials and Motuleños in general),[97] conclusively proves how important maquila jobs are for the state and the region. Indeed, all state officials were proud to show employment statistics and emphasised the economic recovery that followed the installation of the maquiladoras.

Dra. Castilla and Dra. Ramos defended women's work at the maquiladoras on a number of occasions, describing it 'as an extremely positive thing'. Like most state policy-makers, the academics I talked to were keen to emphasise that machismo prevailed in Yucatán (and particularly in rural Yucatán). Civil society and state officials endeavoured to change the situation, and to give women the opportunity to participate in society 'in diverse ways'.[98] Although the word 'modernise' was not often used, it seems clear that that was what they meant. To some, the maquiladoras have helped to integrate women into the labour market.[99]

In terms of its international outlook, state policy-makers justified the maquila from a historical perspective. Officials at the State Secretariat for Commercial and Industrial Development

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[93] Interview with Lic. Marco Gutiérrez (2003) in particular.
[94] Interviews with Lic. Jorge Torre, Lic. Augusto Pérez, Lic. Marco Gutiérrez, Ing. Janitzio Durán. Arq. Carlos Medina, Ing. David Loria (2003).
[95] Op cit.
[96] Interviews with Lic. Jorge Torre, Lic. Augusto Pérez, Lic. Marco Gutiérrez, Ing. Janitzio Durán. Arq. Carlos Medina, Ing. David Loria (2003).
[97] All interviewees at the state and local levels, whether from the State Secretariat for Rural, Industrial and Commercial Development or environmental agencies, agreed on this. Many informal interviews with local shop-keepers, traders and transport drivers confirmed it too.
[98] Interviews with Dra, Castilla and Dra. Ramos (2003), senior researchers in social sciences at the UADY, and particularly with Ing. Janitzio Durán (2003).
[99] Op cit.

emphasised on numerous occasions that the state of Yucatán 'had its own history'. Yucatán always had more commercial and economic relations with the USA than with the rest of country.[100] 'That can be explained in terms of the peninsula's proximity with the south-eastern coast of the USA (which includes the states of Texas, Louisiana, Mississippi, Alabama, Georgia and Florida, mainly) and the difficulties presented by overland travel to Mexico City.'[101]

More importantly, the henequen was mainly sold to Americans, who in turn sold the Yuctecans grains.[102] Thus, export-oriented activities are fairly well embedded in the Yucatecan commercial and economic activities. 'Looking towards the USA to do business still seems to be quite normal.'[103] Moreover, given the liberalisation of trade and finance, the state could only hope to compete with and 'beat' other Mexican states in the bid to attract FDI.[104] State policy-makers made it clear that '(...) in today's world "competitiveness" is a very important word. Whether you are a company or a state, you have to be competitive; that is, economically attractive and efficient. There is little you can do if you do not take that into account.' [105] Promoters of the state of Yucatán certainly feel that the maquila and the FDI coming into tourism prove that they have done a good job.[106]

More critically, the maquila in the ex-henequen region clearly seems to have been a way out of poverty. Mr. Carlos Medina assured me that the aim of the rural development policy was to provide the means for rural households to earn at least two minimum salaries. There is evidence to suggest that it is highly likely that the Maquiladora Programme for the Ex-henequen Region had a similar goal. The clothing maquiladoras were the preferred option mainly because they were seen to be a means to protect the environment, and to be as sustainable as possible, which was in line with the state government's development policy. Although a number of projects to promote rural development have been set in motion (such as lemon production, sheep breeding and aqua-culture), these have always been taken (by state policy-makers themselves) as 'small-scale, primary sector businesses that can improve some families' revenues'. [107]

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[100] Interviews with Lic. Marco Gutiérrez and Lic. Jorge Torre (2003), among others.
[101] Op cit.
[102] Interview with Lic. Marco Gutiérrez (2003).
[103] Op cit.
[104] Interviews with Lic. Marco Gutiérrez and Lic. Jorge Torre (2003), mainly.
[105] Op cit
[106] Interviews with Lic. Jorge Torre, Lic. Augusto Pérez, Lic. Marco Gutiérrez, Ing. Janitzio Durán. Arq. Carlos Medina, Ing. David Loria (2003).
[107] Interviews with Lic. Jorge Torre, Lic. Marco Gutiérrez, Ing. Janitzio Durán, Arq. Carlos Medina and Ing. David Loria (2003).

Officials at the state's agency for Rural Development showed that their programmes were innovative, diverse and adapted to specific locations and people, but remained tentative and usually limited in scope (representing only around five per cent of the state's GDP).[108] As one official put it: 'We are very conscious that our development programmes will never reach the competitive levels of the agro industry of the north of the country, let alone the USA, but that does not mean that people do not benefit and take advantage of them.'[109]

Even rural development policy-makers recognised that the maquila was, in fact, a viable economic option, 'mainly because it targeted people in a region where agricultural activities had been replaced for a long period by the henequen industry'.[110] To show the scale of the problem, rural development officials emphasised that 'in many cases rural development policy was centred on employing young builders to build fences and dig wells'.[111] An attempt to employ ex-henequen workers as fishermen did not succeed, 'mainly because the sector was already saturated'.[112]

From the environmental point of view, many interviewees acknowledged that the Mexican environmental legislation was 'young', and that it was 'inspired by the American model' and even written at certain 'speed'. [113] For most of them though, it was 'fairly complete' and 'if implemented properly it would not meet with any problems'.[114] The weaknesses came from its implementation, and thus from the budget, as well as the human and technical resources allocated to state environmental agencies.[115] All the state environmental officials recognised that even if government efforts were important and many cases yielded very positive results, 'a lot still had to be done'.[116] 'The pace at which environmental threats advance has not been matched by the resources we have at our disposal at the moment. We do our best, but we are generally below the requirements.'[117]

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[108] Interviews with Lic. Marco Gutiérrez, Ing. Janitzio Durán. Arq. Carlos Medina, Ing. David Loria (2003).
[109] Interview with Lic. Marco Gutiérrez (2003).
[110] Interview with Lic. Jorge Torre (2003).
[111] Interview with Ing. David Loria (2003).
[112] Interview with Ing. Janitzio Durán (2003).
[113] All interviewees were from the State Secretariat of Ecology, SEMARNAT-Yucatán, CNA and PROFEPA (2003).
[114] Op cit.
[115] Op cit.
[116] Op cit.
[117] Interview with Ing. Larry Yah (2003).

Moreover, even if promoting the participation of private firms in providing environmental services was universally seen as 'a good strategy'; the work carried by those private companies was seen as 'not even'. Several interviewees commented how different the Environmental Impact Studies can be, as well as the sampling techniques and the quality of tests. More importantly, a few interviewees indicated that it was very easy for a private environmental consultancy firm to register and that these were not regulated by any federal or state government authority.[118] In many cases, SEMARNAT-Yucatán 'had to advise' companies wishing to operate in the state on the requirements of the Environmental Impact Study 'so that they would not present an incomplete and low standard study that potentially could be rejected'.[119] More importantly, state environmental officials unanimously acknowledged that priorities in the state were clear. Getting jobs and developing the economy were the most pressing needs. The environment came second.[120]

It follows that with no exception, all state environmental officials insisted that their job consisted of getting private entrepreneurs to 'join-in' with better environmental practices, but that they 'did not believe that sanctioning and penalising them was the best strategy'.[121] As Dr. Luis Balam so succinctly put it: 'It is also in our interest that these companies continue to operate and continue to come to Yucatán.'[122]

8.3 The Federal Government and Sustainable Development

8.3.1 Environmental Institutions and Environmental Policy

Prior to the creation of the SEMARNAT, the SEDUE[123] (*Secretaría de Desarrollo Urbano y Ecología*) was in charge of evaluating industrial activities in the country and of granting permits for factories to operate. Generally speaking, the literature does not give much credit to SEDUE activities, given the rapid and uncontrolled industrialisation in Mexico City and Guadalajara — principally during the 1970s and '80s (Mumme, Bath, and Assetto, 1988; Mumme, 1992). Given that much of Mexico's industry was owned by the government (e.g. PEMEX, CFF, TELMEX), and that under the ISI programme industrialising the country was a priority,

[118] Interviews with Msc Tamayo and Ing. Alfonso Domínguez (2003), among others.
[119] Op cit.
[120] All interviewees from the State Secretariat of Ecology, SEMARNAT-Yucatán, CNA and PROFEPA (2003).
[121] Op cit.
[122] Interview with Dr. Balam (2003).
[123] Created in 1983 and replaced in 1992 by the INE and SEDESOL (see http://www.ine.gob.mx/ueajei/publicaciones/libros/132/evolucion.html).

SEDUE's activities seemed to guarantee a minimum standard of safety for the population, but little care was given to the environment.

After the NAFTA was signed — and certainly fearing the environmental impact that more maquiladoras could have on the environment — the INE-SEMARNAT (together with other state offices) became responsible for evaluating new industrial projects, authorising their activities and then monitoring them — to make sure they operated under the recently created Mexican environmental norms (Perry, Sanchez, Glaze, and Mazarp, 1990; Gillbreath, 1992; Bowen, Kontuly, and Hepner, 1995; Mumme and Duncan, 1998; Marchack, 1998; Grossman, 2000; Logsdon and Husted, 2000; Kopinak and Barajas, 2002). By that time the environmental situation in Mexico had considerably worsened — particularly along the northern border, and environmental groups had organised to put pressure on the government to incorporate environmental law and policy on their agenda (Gilbert, 1994; Simon, 1997; Marchack, 1998; Liverman et al., 2002). At an international level, sustainable development principles and objectives had reached their height. A commercial treaty such as NAFTA could not simply ignore the importance of considering environmental aspects in its texts. Moreover, a series of 'accidents' related to government-owned industries made it clear that Mexico needed to tackle the risks to the environment at an institutional level (see Table 8.2).

Table 8.2: Evolution of Mexico's Environmental Agencies by Year

Year	Event
	Creation of the *Secretaría de Desarrollo Urbano y Ecología* (Sedue).
1983	The Federal Law on Environmental Impact introduces 'risk studies' as part of the administrative requirements for permits to be granted.
1984	Gas explosion in San Juan Ixhuatepec
	Creation of the Sub Risk Management Office at Sedue
1986	Procedures are put in place to evaluate projects that handle and use hazardous materials
	Publication of the *Ley General del Equilibrio Ecológico y la Protección al Ambiente* (LGEEPA)
	Publication of the rules on Environmental Impact, which take into account Risk Studies and Programmes to Prevent Accidents
1988	A committee on Highly Dangerous Activities is created
1989	A committee for the Analysis and Approval of Programmes to Prevent Accidents is created
1990	The first list on High Risk Activities (according to the use of toxic substances) is published
1992	Creation of the *Instituto Nacional de Ecología* (INE) and the *Secretaría de Desarrollo Social (SEDESOL)* ***Continue next page***

	Creation of the *Procuraduría Federal de Protección al Ambiente* (PROFEPA)
	Environmental Auditing is introduced
	Explosion in the Guadalajara City sewage system
	The *Programa Nacional para la Prevención de Accidentes de Alto Riesgo Ambiental* (PRONAPAARA) is launched
	The *Comités Ciudadanos de Información y Apoyo para Casos de Prevención y Atención de Riesgos Ambientales* are established
1992	The second list on High Risk Activities (according to the use of toxic substances) is published
1994	The *Secretaría de Medio Ambiente, Recursos Naturales y Pesca* (SEMARNAP) is created
1996	Publication of the new *Ley General del Equilibrio Ecológico y la Protección al Ambiente* (LGEEPA)

Source: http://www.ine.gob.mx/ueajei/publicaciones/libros/132/evolucion.html

As these institutions developed, the participation of state agencies was promoted. The incorporation of the private sector was seen as coherent strategy to help the government build environmental institutions while opening a market that would guarantee 'objectivity' and lower the level of governmental responsibility. These measures are in line with the World Bank's guidelines on modernising and developing strategic sectors and strengthening government institutions — so-called capacity building (Navarrete and León, 2005). There is no doubt that the Mexican environmental institutions were designed following the scheme of the EPA in the USA and taking into consideration neoliberal policy guidelines (Marchack, 1998; Grossman, 2000; Logsdon and Husted, 2000). Although the federal budget allocated to the SEMARNAP was considerably larger prior to the crisis of 1995, between 1995 and 1999 it seems to have stabilised at around six per cent of the total federal budget (Table 8.3).

Table 8.3: Federal Budget Allocated to the SEMARNAP (1995–1999)

Fiscal Year	SEMARNAP Budget (million USD)	% of Total Federal Budget
1995	658.85	4.18
1996	884.97	5.06
1997	1,161.68	5.40
1998	1,504.96	6.01
1999	1,201.80	5.98

Source: Logsdon and Husted (2000)

Interviews with environmental officials at a federal level (SEMARNAT) revealed that their concerns are very similar to those expressed by officials at a state level. [124] Although the

[124] Interviews with Dr. Guiilermo Román, Biol. Ricardo Juárez, Biol. Martha Niño, Lic. Eduardo Vega and Msc. Liliana Gutiérrez (2002).

diagnosis of the environmental and developmental challenges faced by Mexico in its efforts to achieve sustainable development portrayed these as extremely varied and complex, all interviewees agreed that efforts had to be made in different directions.[125]

For instance, more cooperation between agencies was called for; most notably those agencies that draw up development policy and protect the environment (e.g. SEDESOL and INE-SEMARNAT).[126] Similarly, even though many more channels of communication had been opened up with NGOs, civil society and rural communities under that administration, more had to be done to consult people before drawing up policy.[127] Furthermore, one major problem was the lack of resources in relation to the goals established by the SEMARNAT.[128] A lack of not only financial but also human and technical resources made it difficult to make a complete and informed diagnosis, but most of all 'to act'.[129] Often the databases of different agencies and those of the federal and state agencies were contradictory and included significant margins of error.[130]

According to the past PAN administration the major challenge 'to start the thinking process to draw up sustainable development policies' was to set a 'land-use plan' at the federal, state and local levels.[131] Although Mexican environmental law was generally seen as 'quite complete' and 'in the process of adaptation to the Mexican reality', [132] it seemed to be 'too general', and did not always favour the 'action of the authorities'.[133] The contradiction in competencies made it urgent that state and local governments draw up their own land-use criteria, following the major principles laid down in the Federal environmental law.[134]

The general feeling was that Mexico's environmental culture (governmental and civil) was slowly developing, and that the economic situation 'was not favourable at all'.[135] The processes of urbanisation were a major challenge, given the lack of planning and the relatively

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[125] Op cit.
[126] Interviews with Dr. Guiilermo Román, Biol. Ricardo Juárez, Biol. Martha Niño, Lic. Eduardo Vega and Msc. Liliana Gutiérrez (2002).
[127] Op cit.
[128] Op cit.
[129] Op cit.
[130] Verbatim.
[131] Interviews with Biol. Martha Niño, Lic. Eduardo Vega and Msc. Liliana Gutiérrez (2002).
[132] Interviews with Dr. Guiilermo Román, Biol. Ricardo Juárez, Biol. Martha Niño, Lic. Eduardo Vega and Msc. Liliana Gutiérrez (2002).
[133] Interviews with Biol. Martha Niño and Msc. Liliana Gutiérrez (2002).
[134] Op cit.
[135] Interview with Biol. Martha Niño, Lic. Eduardo Vega and Msc. Liliana Gutiérrez (2002).

uncontrolled demographic and economic forces behind urban growth. [136] Moreover, resource depletion and consumption on a massive scale were very difficult to control.[137]

All interviewees emphasised that poverty was a major issue at the root of environmental degradation and depredation of natural resources, but prosperous sectors of the Mexican economy — such as tourism and the oil industry, certainly played a very important part. Urban growth, deforestation, air, land and water pollution, the protection and regeneration of ecosystems and the promotion of the sustainable use of natural resources (particularly water) all had to be attended to in different measure in different places.[138]

A new vision based on *'cuencas hidrológicas'* promised a more effective definition of objectives than 'the traditional one, based on political and administrative boundaries'.[139] However, the challenges seem to be immense. As Biol. Martha Niño put it: 'It all looks all very well on paper, but when you actually have to do things you realise how complicated and costly an effective policy can be. We spend our time solving very urgent, immediate problems, even though we have a very ambitious and well prepared agenda. To draw up and apply a "truly sustainable development policy" one has to be a public servant, a negotiator and an environmental expert. How difficult can that be?'[140]

Interestingly — and consistent with the Monty case, the officials responsible for hazardous waste management and industrial control made it clear that government environmental policy was 'reactive' rather than 'preventive' and that such an approach had clearly negative consequences.[141] Moreover, the CRETIB analyses were called into question by Dr. Gustavo Román, who believed that '[these] were not adapted to the Mexican reality, but were mainly a copy of US environmental legislation'.[142]

I was told several times that the inclusion of the private sector was 'positive' and certainly 'very welcome', but that the proliferation of environmental consultancy firms was not necessarily a

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[136] Interviews with Dr. Guiilermo Román, Biol. Ricardo Juárez, Biol. Martha Niño, Lic. Eduardo Vega and Msc. Liliana Gutiérrez (2002).
[137] Op cit.
[138] Op cit.
[139] Interview with Msc. Liliana Gutiérrez (2002).
[140] Interview with Biol. Martha Niño (2002).
[141] Interviews with Dr. Guiilermo Román and Biol. Ricardo Juárez (2002).
[142] Interviews with Dr. Guiilermo Román (2002).

good thing.[143] As at the state level, federal officers of the SEMARNAT complained about the quality of the Environmental Impact Studies in general and stressed that these can represent in some cases a business opportunity for some people and a simple formality for entrepreneurs.[144] Dr. Guillermo Román pointed out, 'It seems that the environment is often taken as a business opportunity and that legislation supports these types of businesses, but not necessarily to the benefit of the environment.'[145] Biol. Martha Niño went further: 'If you want to make money establish an environmental consultancy firm, it is really easy. No one will regulate you or question your methods.'[146] As at the state level, the federal officials of the SEMARNAT believed that economic development was a priority that 'simply could not be ignored'.[147]

Interviews with PROFEPA officials confirmed the views of the SEMARNAT officials (at a state and federal levels) on the Mexican legislation, the definition of competencies, goals and means to reach them. For instance, all PROFEPA officials agreed that the Mexican environmental law was 'relatively new', and thus in the process of adaptation and redefinition to respond to the 'Mexican reality'. Most interviewees emphasised that some sectors clearly had legal flaws (notably the area of waste management, for example) and that often the competencies of agencies and offices at different levels of government were not properly defined.[148] For some, the legal framework was 'too general' and 'did not help in the elaboration of policies' nor did it help to 'improve the government's action'.[149] As Dr. Luis Fernando Hernández put it: 'Sometimes it is not clear whether we are supposed to review the evidence and sanction according to the law, or whether we are encharged with vigilance and control.'[150]

PROFEPA officials concurred with the view that the budget allocated to environmental activities was far too limited — the salaries at PROFEPA are among the lowest in any environmental agency.[151] Human and technical resources were also overstretched, which obliged them to allocate their resources 'very strategically'.[152] It was clearly very important to have the support of other agencies at the state and local levels of government in order to assure

[143] Interviews with Dr. Guiilermo Román, Biol. Ricardo Juárez, Biol. Martha Niño and Lic. Eduardo Vega (2002).
[144] Op cit.
[145] Interview with Dr. Guiilermo Román (2002).
[146] Interview with Biol. Martha Niño (2002).
[147] Op cit.
[148] Interview with Dr. Luis Fernando Hernández (2002).
[149] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández, Msc. Egar del Villar and Lic. José Luis Támez (2002).
[150] Interview with Dr. Luis Fernando Hernández (2002).
[151] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández, Msc. Egar del Villar and Lic. José Luis Támez (2002).
[152] Op cit.

a decent level of coverage across the country. Subcontracting to private companies or universities was also very helpful.[153] Private and international donations helped them to invest in monitoring devices.[154] Moreover, coordination with other agencies, although it does occur, is not systematic and conflicting interests have often debilitated interactions.[155]

PROFEPA also had the support of NGOs and the civil society who 'little by little' are showing more interest in participating, together with government authorities.[156] On a positive note, Msc. Edgar del Villar stated, 'Fortunately, citizen's complaints have risen dramatically in the last three years — by thousands of percentage points. Our goal is to respond to 100 per cent of them. I can tell you that last year we attended to 90 per cent of them.'[157]

The priority areas for the PROFEPA were similar to those of the SEMARNAT. Forestry is the most important area, followed by the protection of biodiversity and marine resources.[158] Tourism is one of the most important economic sectors the PROFEPA has to monitor, mainly because it is concentrated in coastal areas.[159] Furthermore, poverty was defined as a major cause of environmental damage and resource overexploitation. As Msc. Liliana Gutiérrez explained: '60 per cent of all offenders are indigenous people who find themselves in poverty or extreme poverty. For example, they usually cut a tree or kill iguanas for survival. Some 30 per cent of the total offenders are companies that have a permit to exploit natural resources but exceed the quotas we grant them. The timber industry, fishing and paper industries are the most damaging. Around five per cent is organised crime. Indigenous people are often exploited to cut trees or catch exotic animals for sale.'[160] Msc. Liliana Gutiérrez did not specify who was responsible for the remaining five per cent of environmental damage.

Although the priority areas for the PROFEPA seem to be clear, Ing. Luis Fernando Hernández affirmed that the law puts too much emphasis on waste management and industrial monitoring. Moreover, PROFEPA's registers of polluting industries have several limitations.[161] Only big

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[153] Op cit.
[154] Interview with Msc. Liliana Gutiérrez (2002).
[155] Interview Dr. Luis Fernando Hernández (2002).
[156] Op cit.
[157] Interview with Msc. Egar del Villar (2002).
[158] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández and Msc. Egar del Villar (2002).
[159] Interviews with Msc. Liliana Gutiérrez and Msc. Egar del Villar (2002).
[160] Interview with Msc. Liliana Gutiérrez (2002).
[161] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández, Msc. Egar del Villar and Lic. José Luis Támez (2002).

plants are properly accounted for, mainly because it is easier to trace them.[162] These (5,000 units) concentrate around 80 per cent of all polluting activities.[163] The rest (30,000 plants) remain relatively uncontrolled.[164] PROFEPA does not have a complete register of small to medium-size plants, because they are not registered as tax payers.[165] This results in serious margins of error (of more than 100 per cent) when it comes to the estimations of the total volumes of hazardous waste managed in the country.[166] The fact that big industries are relatively easy to trace and monitor is reflected in their willingness to cooperate and to get international environmental certification ('such as ISO 9000 and the like').[167] 'We are trying to make industries care about the environment so that they seek certification instead of us having to keep an eye on them and penalise them when they violate the law.'[168]

When industries are certified (either by the International Standard Organisation or PROFEPA itself), PROFEPA's job is considerably easier.[169] However, when penalties have to be imposed it seems clear that the fines are too modest to ensure that the transgressions will not be repeated again.[170] Msc. Liliana Gutiérrez specified, 'The worst administrative fines are around 20,000 minimum salaries [US$60,000]. The largest fines imposed to protect wild life are around 50,000 minimum salaries (1.5 million pesos or around US$150,000).'[171]

This aspect of the law is so important that it calls into question the whole approach of the PROFEPA towards environmental protection. For Dr. Luis Fernando Hernández, 'The sanctions are not adequate to prevent those who have broken the law from breaking it again, let alone to repair the damage that they have caused. Sometimes they actually have an economic incentive to break the law. I do not think that helps at all.'[172] According to Dr. Luis Fernando Hernández, PROFEPA's 'law enforcement approach' is not an adequate strategy for Mexico, simply because 'the country is too big and the government too small. Clearly, more incentives for participation have to be put in place.'

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[162] Interviews with Msc. Liliana Gutiérrez and Dr. Luis Fernando Hernández (2002).
[163] Op cit.
[164] Op cit.
[165] Op cit.
[166] Interview with Dr. Luis Fernando Hernández (2002).
[167] Op cit.
[168] Op cit.
[169] Interview with Dr. Luis Fernando Hernández (2002).
[170] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández and Msc. Egar del Villar (2002).
[171] Interview with Msc. Liliana Gutiérrez (2002).
[172] Interviews with Dr. Luis Fernando Hernández (2002).

Like SEMARNAT officials, officials at the PROFEPA acknowledged that the participation of the private sector was not always as good as they would have wished.[173] 'Some of the administrative processes to assure environmental protection have to be revised. In many cases they become a bureaucratic mechanism that does not achieve very much. SEMARNAT authorises industries to operate, but they do not always make sure that the industries they register operate in accordance with the Impact Studies. We often have to verify how industries work and we find that authorisations should not have been given in the first place. When this happens, tensions and even certain competition between agencies emerge. We do not trust their judgement and they do not trust our way of working.'[174]

Dr. Luis F. Hernández pointed out that foreign corporations react very differently to the national ones. 'When they are sanctioned they develop a series of legal actions to avoid penalties, not because they cannot pay the fine, but because they have to justify that payment to their parent firms. They defend themselves to avoid corporate sanctions. The national firms try to comply with the very minimum standard, so that they are not constantly visited by us.'[175]

Overall, Msc. Liliana Gutiérrez estimated that only 30 to 40 per cent of those registered with SEMARNAT comply with Mexican environmental laws. Despite this, she added that only 1.5 per cent incur a serious penalty. On the other hand, Msc. Edgar del Villar estimated that around 60 per cent of the GDP is 'properly' monitored. In five years PROFEPA is said to have significantly increased the probability of an industry being inspected.[176]

Msc. Edgar del Villar assured us that PROFEPA has considerably developed its databases: 'We now have geographical information systems.'[177] Unlike the SEMARNAT officials, the PROFEPA officials considered the authorities' evaluation of the current environmental situation in Mexico to be 'satisfactory', but felt 'certainly, that it could be improved'.[178] Most interviewees noted that the information that PROFEPA has at its disposal has been elaborated, compiled and adjusted over a period of around four decades.[179] 'It was clear 20 years ago, that

[173] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández, Msc. Egar del Villar and Lic. José Luis Támez (2002).
[174] Interview with Dr. Luis Fernando Hernández (2002).
[175] Op cit.
[176] Interview with Msc. Egar del Villar (2002).
[177] Op cit.
[178] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández, Msc. Egar del Villar and Lic. José Luis Támez (2002).
[179] Interviews with Msc. Liliana Gutiérrez, Msc. Egar del Villar and Lic. José Luis Támez (2002).

economic development was a priority whatever the environmental costs; today, the priorities have not changed, but there are mechanisms to control environmental depravation.'[180]

Given the nature of PROFEPA activities, all interviewees acknowledged that corruption was a major problem that had been worryingly common in the previous administration.[181] They explained that it was easy to bribe an inspector, 'because inspectors at PROFEPA were the worst paid employees in all the government environmental institutions'.[182] Officials in higher positions were also caught and immediately sanctioned.[183] Most interviewees associated cases of corruption with the PRI and explained that, in part, the new PAN administration had won the elections because citizens were tired of corruption. 'Corruption exists, but a recent rise in salaries to combat it has had positive results. For example, inspectors now earn three times more than they used to earn, although unfortunately salaries remain low.'[184]

8.3.2 Development Policy and the Sagarpa

From the developmental point of view, the signing of the NAFTA treaty was the culmination of a process of economic liberalisation and 'integration' with the USA. By liberalising its finance and trade, Mexico would agree to compete on an equal basis with the US economy. Certainly Mexico could profit from it, notably by attracting FDI — its oil was already sold. Other aspects of NAFTA such as the exportation of certain agricultural products that Mexico produced more efficiently would complete the package. In addition, Mexico could have access to international loans (from the WB and IMF) and the expertise to develop strategic sectors (Navarrete and León, 2005) and smooth over the economic transition. Rural development opportunities would be opened up thanks to a revision and changes in the legal status of the *ejido*.

Like the interviewees at the state level, most interviewees in rural development agencies at a federal level (SAGARPA) acknowledge the fact that Mexico's agricultural sector had been in decline for years and that very few producers engaged in large-scale production. Rather they were localised in certain regions of the country, and their activities had nothing to do with what

[180] Interview with Msc. Egar del Villar (2002).
[181] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández, Msc. Egar del Villar and Lic. José Luis Támez (2002).
[182] Interviews with Msc. Liliana Gutiérrez, Dr. Luis Fernando Hernández and Msc. Egar del Villar (2002).
[183] Interviews with Dr. Luis Fernando Hernández and Msc. Egar del Villar (2002).
[184] Interview with Msc. Egar del Villar (2002).

happens in *ejidal* lands or the like.[185] Small producers were depicted as 'un-competitive' and 'relying on government aid or government assistance to keep producing'.[186]

More importantly, Mexico had around three and half million agricultural units, dispersed all over the country and mostly grains (maize and beans) were produced in small units.[187] 'That makes things more difficult.'[188] Usually, the agricultural policy (in the form of subsidies or price warranties) destined to support small to medium-scale producers ends up benefiting a few large or very large producers.[189] 'The government has not been able to help small producers because their production does not reach the market. They produce for their own consumption. Thus, government policy to protect grains has always failed. For some time now policies for small producers have been in the form of aid to combat poverty.'[190]

SAGARPA's post-NAFTA strategy comprised supporting agricultural products in which Mexico had a comparative advantage, such as certain fruits (avocado, mango and lemon, for example) and vegetables (tomato, principally) while drawing up policies to alleviate rural poverty.[191] Lic. Leonel Ramírez explained, 'Why should we support the production of grains if we do not have a comparative advantage to produce them? What is more, we will never have it.'[192] Lic. Ramírez informed us that for the SAGARPA it was clear that the best thing to do was to favour non-agricultural incomes among small producers, rather than to persist with the classic, unsuccessful policies of the past. These have proved not to develop the agricultural sector.[193] In fact, changes to the law to allow *ejidos* to actually own the land — and thus, to allow them to sell it, were intended to promote private investment in the sector.[194] 'Such changes have had very limited results because the sector is still too risky and particularly sensitive to change in Mexico.'[195]

However, the government still believes that investment in infrastructure and R&D is vital to support the agricultural sectors that seek to be competitive at a global level or that employ a

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[185] Interviews with Lic. Leonel Ramírez, Ing. Roberto Cedeño and Dr. Arturo Garza (2002).
[186] Interview with Lic. Leonel Ramírez (2002).
[187] Op cit.
[188] Op cit.
[189] Interview with Lic. Leonel Ramírez (2002).
[190] Op cit.
[191] Interviews with Lic. Leonel Ramírez, Ing. Roberto Cedeño and Dr. Arturo Garza (2002).
[192] Interviews with Lic. Leonel Ramírez and Ing. Roberto Cedeño (2002).
[193] Interview with Lic. Leonel Ramírez (2002).
[194] Op cit.
[195] Op cit.

considerable number of people (e.g., in the coffee sector).[196] 'NAFTA is certainly challenging because it will reveal the sectors where we are really competitive. If it was not for NAFTA we would not be exporting avocados for example. However, it is true that in some cases, sanitary measures have impeded some products from penetrating the US market. Melon for example, is banned because of two alleged cases of salmonella.'[197]

Lic. Ramírez admitted that there were neither long term agricultural policies nor even a solid state policy to promote agriculture among small and medium producers. 'However, it is very important for us to assist producers to turn them into agricultural entrepreneurs that can manage a business. We would like to integrate our food chains, but to do that we need entrepreneurs. Chile is certainly the model to follow. They are organised in unions that manage government resources and produce for export. They actually concentrate on high quality products. But again, they have around 500 productive units only.'[198]

On the other hand, Ing. Roberto Cedeño emphasised that SAGARPA had recently promoted decentralisation. State and local governments have the responsibility to define and adjust their rural policies according to specific needs and specific local characteristics and opportunities.[199] Ing. Cedeño emphasised that SAGARPA's goal was to promote rural development in a broader sense. That is, not only to promote the modernisation and linkages of primary sectors among large and small producers, but to develop schools, health and housing. In his own words: '70 per cent of our budget is spent on poverty alleviation policies. Young rural men are emigrating, which is why we have to concentrate on other [non-agricultural] activities that can keep them here. The same goes for women. Our goal for the year 2006 is that young rural people earn practically the same as low-income workers in cities.'[200]

It is no wonder that often the rural poverty alleviation policies of SAGARPA overlap with those of SEDESOL, although they are not drawn up on the basis of any consultation process.[201] Ing. Cedeño noted that agricultural development is worryingly lagging behind, principally because little investment has followed the policies of the 1950s. By means of an example, Ing. Cedeño

[196] Interviews with Lic. Leonel Ramírez and Ing. Roberto Cedeño (2003).
[197] Interview with Lic. Leonel Ramírez and Ing. Roberto Cedeño (2003).
[198] Interview with Lic. Leonel Ramírez (2003).
[199] Interview with Ing. Roberto Cedeño (2003).
[200] Op cit.
[201] Interviews with Lic. Leonel Ramírez, Ing. Roberto Cedeño and Dr. Arturo Garza (2002).

pointed out that the surface area irrigated for agricultural use in 2003 (five million hectares) was almost the same as that of the 1960s, when Mexico had around 30 million inhabitants.[202]

Ing. Garza also emphasised that the 'disorganisation' among small and medium producers was 'a very serious problem' and that this administration had a totally different approach to that of the previous one. Their priorities were profitability, capitalisation and efficiency, because 'at the end of the day economic theory imposes itself'.[203] 'Instead of planning to produce what their parents or grandparents produced, young *campesinos* should ask themselves what they should produce to sell in the global market. We are trying to promote this sort of thinking through programmes like *Alianza para el Campo*. For every peso producers invest, the government contributes one peso.'[204]

What these interviews clearly showed is that agriculture in Mexico is extremely polarised between large successful agricultural entrepreneurs and medium to small-scale rural units living in poverty.[205] SAGARPA seems to have admitted defeat and does not even devote more resources to policies destined to support or modernise small-scale farming — although PROCAMPO aid is maintained as part of a poverty alleviation policy.[206] Unlike the USA and other European countries, Mexico is no longer willing to subsidise agriculture.[207] Past experiences seem to be rather bitter, but more importantly, in an era of globalisation and free-trade 'those who are not competitive in agriculture have to find a different activity'.[208]

The interviews clearly show why the Maquiladora Programme for the Ex-henequen region was seen as a success story by state government officials. The introduction of maquiladoras in the ex-henequen region is perfectly consistent with the idea that the promotion of non-agricultural activities in an un-competitive rural environment is 'economically more efficient'.[209] What is more, the Maquiladora Programme for the Ex-henequen Region has provided urban-type jobs and the salaries of low-income urban workers.

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[202] Interview with Ing. Roberto Cedeño (2002).
[203] Interview with Dr. Arturo Garza (2002), although Lic. Leonel Ramírez and Ing. Roberto Cedeño also referred to economic theory to justify policy.
[204] Interview with Dr. Arturo Garza (2002).
[205] Interviews with Lic. Leonel Ramírez, Ing. Roberto Cedeño and Dr. Arturo Garza (2002).
[206] Op cit.
[207] Op cit.
[208] Interview with Dr. Arturo Garza (2003).
[209] Interviews with Lic. Leonel Ramírez, Ing. Roberto Cedeño and Dr. Arturo Garza (2003).

Conclusions

As we have seen, despite the state government efforts to assure that an environmentally friendly maquila would be installed in the ex-henequen region, Monty's environmental performance has not been good. Perhaps given the geological conditions of the state of Yucatán, the risks associated with Monty's activities are magnified, but Monty has failed to self-regulate in order to minimise risk. Not only has Monty violated the regulations on hazardous waste treatment and disposal, but also those on water extraction, water treatment and waste water disposal. What is more, Monty's non-hazardous waste is certainly an immediate threat to the wellbeing of the population living near to the waste-dump and potentially for the whole region.

If it was not for the state and federal environmental authorities, perhaps Monty would have continued to operate at the margins of the Mexican environmental norms. Although citizen's denunciations were taken seriously by local authorities, the fines imposed on the Monty plant did not deter them from committing the same offence for a second time. Fortunately, all the responsible environmental agencies have closely monitored Monty's activities, allegedly because the Monty plant in Motul is extremely big and thus potentially very polluting. The costs associated with the building of a sanitary land-fill site are unavoidable costs that the local governments of the region will have to pay in order to ensure that Monty's solid waste does not pose a serious threat to the environment and public health.

More generally, the Mexican environmental institutions seem to still be in the process of consolidating norms and practices. Officials from those institutions recognised that sustained efforts have been made by successive administrations, but that resources are scarce (human, technical and financial) and growing (and diverse) environmental threats mean that the situation is difficult to control. Mexico's environmental, institutional and civil culture is very recent. Poverty is a major problem and the extension of the territory, as well as corruption, still pose major challenges for those institutions.

Although considerably more private environmental consultancy firms now operate in Mexico, this does not assure (in any way) that better environmental practices are implemented in the country. Private consultancy firms have multiplied, but these are not subject to government regulations, and the conditions for registering a private consultancy firm are relatively easy to comply with. On the other hand, the participation of citizens in terms of denouncing

environmental offences has risen at an impressive rate and the coordination between government agencies, NGOs and civil society seems to have improved markedly.

From the developmental point of view, the interviews clearly show that Mexican federal and state governments made a deliberate decision to promote non-agricultural activities in rural areas of Mexico. The goal seems to have been to ensure that rural families might earn the same as low-income urban families. Mexico's approach to sustainable development is largely based on neoliberal economic theory and 'the protection of the environment'.

Policy-makers at federal and state levels justified the promotion of the maquila, and the end of subsidies to smallholders, on the grounds of economic efficiency. Only crops that might be marketed on a global scale should be produced. Low-skilled, low-paid employment seems to have been preferred over grain production for auto-consumption. Thus, it is not surprising that the rural development policy has become a poverty alleviation policy, taking the form of aid, coupled with the introduction of non-agricultural activities.

Under such a scheme, the Maquiladora Programme for the Ex-henequen Region has been a success, and perhaps an example for other highly rural indigenous states in Mexico or Central America. After all, the Plan Puebla Panamá is a major 'development' plan based on exactly the same principles and objectives as those that determined the Maquiladora Programme for the Ex-henequen Region. Whether this is a sustainable development solution can be hardly contested upon the evidence presented in this thesis thusfar.

Chapter Nine

OVERALL CONCLUSIONS

As seen in Chapter Five, the overall economic impact of Monty and of the Maquila Programme for the Ex-henequen Region has been very positive. Employment grew significantly in several sectors of the economy. Income and consumption in the region for the period 1990–2000 significantly improved. Not only has the Maquila Programme for the Ex-henequen Region provided jobs for those working in clothing maquiladoras, but also notably for those who built roads and ports, and for those who maintain the maquila infrastructure and transport maquila inputs and merchandise. Schools, hospitals, the retail sector and local governments have also employed more people, arguably as a result of an increase in the spending capabilities of a significant number of people in the region. Monty alone injects US$1 million a month into the regional economy (by concept of salaries to assembly line workers alone), an amount of money never seen before in the ex-henequen region.

Before Monty went into operation, women could only find jobs as domestic servants in Mérida, or more rarely in trade. Women now find jobs in the maquila, hospitals, schools and small businesses, arguably because of the economic recovery brought about by the Maquiladora Programme for the Ex-henequen Region. Significantly more women now seem to work in the formal economy than did so before the Maquiladora Programme for the Ex-henequen Region was launched.

The economic improvements certainly alleviated migration (particularly during the period 2000–2005), although the ex-henequen region is still a net expeller of people. The maquila in rural Yucatán has not stopped migration, let alone attracted people from other parts of the country. However, many more Motuleños seem to have come back and stayed in the region, arguably because they can find a job — not necessarily in the maquila.

As we have seen, the population growth in the ex-henequen region over the period 1990–2000 and 2000–2005 remained moderate and is mainly explained by high birth rates; showing that the demographic dynamic of the ex-henequen region remains rural. Moreover, agriculture is clearly the sector that employs more workers and the families of maquila workers seem to rely heavily on agriculture to complement the household earnings. Despite maquila jobs were introduced in

the ex-henequen region, rural activities predominate and remain the sector that employs more people, notably men.

Chapter Six showed that men constitute by far the majority of the workforce at Monty (like in Motul and the ex-henequen region as a whole). In addition, married men seem to be the more stable population and those who work longer at the plant. Presumably it is married men — rather than single workers and married women — who bear more responsibility for bringing money into the house. In contrast, most works on the clothing maquilas of the north have emphasised, for more than twenty years, that women (single or married) are those generally providing for their families.

The fact that 70 per cent of the Monty workforce is male is not at all typical of a clothing maquiladora. At Monty men perform significantly more tasks than women, and more often occupy supervisory positions. As has been seen, the Motuleños' traditions and the local government's Programme for Employment might explain such an original pattern of distribution of work between men and women (in a clothing maquiladora). Motul's prolonged rural and indigenous past seems to be an important element in explaining why more men than women work at Monty and why they occupy higher positions. Motuleño men seem to be in charge of bringing money into the home, and are usually the heads of family.

Although there is no doubt that Monty has consolidated as a very important source of employment for young Motuleño women, these tend lo leave work when they get married or have children. Nurseries (provided by the local government, not Monty) have not offered a real solution to keep women at work during those phases of their lives, in part because 'patriarchal' values are still strong and women do not like to leave their children with 'strangers'. Female urban maquila workers seem to behave in a similar fashion.

Despite all these, Monty has been a real working option, particularly for women. Women know that they have very good chances of being employed at Monty, even if it is their first job. Compared to the young men of the ex-henequen region, women have fewer working options. Young single men usually try other jobs before entering Monty (often in the tourist sector in Mérida, Tulum, Cancun or Playa del Carmen, or they work as builders) or quit the job to come back some time later.

Although more men have been integrated to maquila activities relatively recently – and notably at Monty, most maquila workers are still mainly young, single, extra income earners from low income (urban and now rural) households. However, as noted earlier, relatively more married men (and significantly fewer married women) work at Monty to sustain their rather small, nuclear families.

The literature on rural work markets and household dynamics confirm that men usually act as breadwinners, while women do the housework. Married women seem to work outside the home only when the household faces an economic crisis. Impeded by limited working opportunities and patriarchal values, rural women rarely work in the formal economy and are usually in charge of the children. The Monty case in part confirms all of these findings.

Similarly, the literature suggests that more married and divorced women work in the (mainly clothing) maquiladoras than in the past. What all of this shows is how precarious the job market is in (urban and rural) Mexico, and how the maquila has consolidated as a job opportunity for low-income households, in general. Most importantly, high turnovers (at Monty and elsewhere) confirm that maquila employment is mainly a temporary and cyclical solution. Although many authors maintain the opposite; low wages and hard (alienating) work seem to deter workers from staying long at the same plant.

Although it is claimed that turnover rates at Monty are significantly more controlled than in the clothing maquiladoras of the north; the high turnover rates prevailing in the sector prove that the benefits of working at the maquila for a prolonged period of time are not enough to keep workers in the same plant for more than two or three years. In addition, Monty workers are exposed to cyclical firing periods related to US economic cycles. Monty — like most maquiladoras — depends on FDI and positive US economic cycles. Even though working conditions are certainly better than in the henequen haciendas of the past — though not necessarily better than in agriculture, the training given at Monty is limited, and only applies to clothing maquila-type jobs. Training at Monty can hardly be compared with the training given by capital-intensive maquiladoras, which, in any case, is also only applicable to maquila-type jobs.

Compared to the clothing maquiladoras of the north, Monty pays less, simply because Yucatán is in the southern region of Mexico (region C), where the lowest minimum salaries in the country are paid. Maquila workers in Mexico are said to earn on average two and half minimum

salaries. Workers in the Monty sample earned around two. Therefore, the impressive growth of the Monty plant (the biggest in the state by far) would seem to be due to general unemployment and poverty, but also the saturation of the tourist sector, the fact that building works are temporary, that gains in agriculture are minimal, and that Motuleños value living in their place of birth.

Monty's location and its other 'additional' benefits — in comparison with other local jobs — such as free transport, canteens, the possibility of earning a stable income, bonuses and health services, seem to explain certain workers' preference for working at Monty rather than elsewhere. Experienced workers do not seem to earn more at Monty than they would in any other local or regional job (in the tourist sector or construction works, for example). On the contrary, inexperienced workers or those new to the work market, particularly young women, seem to value the salary at Monty more highly.

But perhaps one of the most negative and significant findings is that Monty remains an enclave economy, unlike other clothing maquiladoras (notably those of La Laguna region in Torreón, Coahuila). This is what maquila critics feared most when the development of the EMI reached what they thought were 'disproportionate' levels. As shown in Chapter Three, INEGI (2005) data confirms that barely three and a half percent of all maquila inputs are produced in Mexico, despite the unquestionable modernisation of the sector. The fact that the maquila (in many cases) remains an enclave economy has been one of the most important critiques levelled at the sector ever since.

Furthermore, interviews with state development officials suggest that maquila promoters in Yucatán (today) do not expect the maquila to be anything more than an enclave economy. The real interest behind the promotion of the maquila industry in the ex-henequen region is to provide jobs for low-income rural workers, mainly to release them from poverty – or 'to help them earn the same as low income urban families'.

Several authors sustain that the development of the maquila industry has allegedly not been matched by the development of local industry, R&D or even a significant improvement in Mexico's labour market. What is more, the Monty case proved that most of the negative characteristics of the maquila persist. In many respects, what was written about first generation maquilas 20 years ago is still valid for the Monty case today.

Chapter Seven confirmed that dependency on maquila employment (and thus FDI) at a household level is (in relative terms) at its highest level. Today, the EMI is not only an economic activity that provides low-income jobs in northern border (and central) cities, but also one that alleviates poverty in rural areas of Yucatán. As state and federal officials of development agencies clearly stated, 'the maquila in the ex-henequen region was conceived as an employment policy to alleviate rural poverty, and thus, to help households to earn as much as low income urban families — that is, at least two minimum salaries'. That vision seems to stray quite far from the developmental arguments given by maquila sympathisers and even further from what policy-makers promised the NAFTA would bring.

It is no wonder that the personal (and household) characteristics of northern border maquila workers are very similar to those of rural Yucatecan maquila workers. The household composition and household dynamics of the Monty workers are strikingly similar to those of northern border maquila workers employed in the clothing and electronics maquiladoras of Tijuana. In both cases, the workers belong to large, usually extended families with several income earners and often have several members working in the maquila or in the same plant. Only by having several maquila workers per family can these households improve their precarious situation. As a consequence, families with more young single maquila workers have a higher household income than those with only one. It appears that young members of the same household work at the maquila intermittently, to allow periods of recovery.

Despite all the negative aspects of the maquila, the Monty workers' households are clearly above the poverty threshold of two minimum salaries per household set by state government officials. On average, the Monty worker's households had an income of three and a half minimum salaries, although five minimum salaries are said to be needed to buy a *canasta básica* for a large family.

Even though the Monty worker's houses are not generally better equipped than the average regional house, the data show that they usually have more than the basic infrastructure (they all have water, electricity, and a toilet and most have electro domestic appliances). The Monty worker's houses tended to have more rooms than the houses in the city of Motul, seemingly because Monty worker's families are larger. However, it was common to find that one room serves as a kitchen during the day and a dormitory at night. Low income families usually have to adjust to the relatively limited infrastructure of their houses given that they are usually large extended families, mainly adhering to that pattern to cope with poverty better.

From the environmental point of view, Chapter Eight showed that despite the efforts made to bring in non-polluting maquiladoras, Monty is far from being a non-polluting, low environmental risk maquiladora. On the one hand, the particular geological conditions of the Yucatecan soil magnify the danger of underground water pollution. On the other hand, it seems that Monty did not have a strong enough economic incentive to comply with the Mexican environmental norms; which according to the literature is quite common among TNCs operating in LDCs. More importantly, Monty does not have a water treatment plant (unlike Lee Corporation), even though it carries out water polluting activities.

As described earlier, Monty was fined on two occasions, once for not registering its hazardous waste volumes and for not making arrangements within its installations to store such waste, and a second time for not declaring the amount of water it extracted, the concentrations of chlorine in its waste water, and the type of waste water deposits that it used. Furthermore, Monty committed the same offences for a second time, seemingly because the penalties were low and inexpensive. Perhaps more importantly, Monty's faecal and urinary waste is disposed of in the municipal open-air waste dump, as is Monty's industrial waste (pumice stone, cloth remnants and indigo dye or Zinc trioxide).

Thus, even though Monty's activities fall within the range of low polluting maquila activities, these have posed considerable threats to the population and the environment to date. The governments' environmental files on Monty and interview data suggest that state government environmental offices have monitored Monty's activities properly, but that penalties have not been sufficient to deter Monty from committing similar environmental offences (on at least two occasions). Interview data at a federal level confirmed that Mexico's approach to environmental protection is rather weak.

Mexico's policy clearly favours economic activities over environmental protection. After all, one of the most important challenges for the Mexican government is to develop the local labour market — in part by promoting maquilas and other highly exploitative industries (in environmental terms). The fines or penalties for those who commit an environmental infraction are too weak to prevent them from committing a similar offence, let alone to pay for the damage that they might have caused.

My interviewees from SEMARNAT and PROFEPA assured me that most of Mexico's environmental problems are derived from the excessive exploitation of natural (protected)

resources by the poor and extremely poor. Certain industries also exploit the country's natural resources beyond the levels stipulated on the permits granted by the SEMARNAT, notably the timber industry and fisheries. In addition, government institutions have not got the capacity to monitor and protect the environment stringently and on a national scale, and local governments do not have a sufficient budget to assure a minimal environmental infrastructure. In part, this is because legislation is only now adapting to Mexico's needs, but it is mainly because human and technical resources are scarce. The emergence of private consultancy firms does not seem to assure better environmental monitoring and practices.

From the developmental side, SAGARPA officials clearly explained that rural development policy for smallholders took the form of poverty alleviation policies. The agency's view that the best way to cope with rural poverty was to promote non-agricultural work was very revealing. On the one hand, it explains the origins of the Maquiladora Programme for the Ex-henequen Region and why most state and local government officials saw it as an unquestionable success. On the other hand, it shows that the Mexican government is resolved not to support small agriculture, but rather to replace it with low paid non-agricultural activities. The NAFTA treaty and the NEM seem to be at the root of such a decision.

The consequences this lack of support for small-scale farming and its replacement by maquila-type jobs have far-reaching implications from the sustainability perspective. The Mexican government is resolved to promote the cultivation for export of fruit and vegetables (instead of supporting smallholders' production for local markets); in the belief that the economic comparative advantages actually work in the interest of the country. Needless to say, export-oriented agricultural ventures are generally developed in very large operations owned by a very small number of agri-business men — unlike the case of Chile.

As a consequence, Mexico increasingly imports basic foods from the USA (notably grains and cereals, but other consumers goods too), and thus the dollars earned from the maquila (and other enterprises) go back into the US economy. By applying the NEM Mexico increases its dependency on food imports in the long run, while failing to integrate and develop local sectors of the economy. Such a policy falls a long way short of bringing economic development to the country, let alone sustainable development. The poor integration of peasants and smallholders into export-oriented activities certainly constrains the developmental capacities of Mexico's agricultural sector.

Certainly it would be an outdated and simplistic conclusion to 'blame' the maquila for Mexico's poor economic performance over recent decades and for worsening working conditions. Although Stoddard (1987) was one of the first to propose to study the maquila in comparison with local industry — and with good reason — today that comparison does not seem to be particularly useful, simply because maquila employment is no longer a rarity and because Mexican industry has changed dramatically over the last two decades. In fact, now more than ever maquila employment characterises the type of industrial jobs that Mexico can provide to those new to the work-market. Maquila-type jobs are the most visible face of the NEM, and thus cannot be judged separately from neoliberal policy.

The impact of the maquila has to be viewed in the context of NAFTA and, more generally, considering Mexico's lack of alternative economic and development policy for more than 20 years. Several authors have claimed that the Mexican work market has deteriorated since NAFTA was signed and that poverty has diminished slightly — in relative terms — but remains high, both in the cities and the countryside. The economic disparities between regions and states have also widened. The persistent migration of Mexicans to the USA and Mexico's increasing reliance on remittances from Mexican workers and income from oil exports are all evidence of Mexico's poor economic performance over the last two decades. The drug industry, organised crime and corruption have reached new heights.

Even from the weakest sustainability perspective, the maquilas could scarcely be considered a sufficient development policy let alone a sustainable development alternative. Even though the aggregated economic and social impact of the EMI in rural Yucatán proved to be quite positive (it alleviated unemployment, boosted local and regional consumption, developed infrastructure and created other 'indirect' jobs), many problems persist. As it is arguably the case throughout the country, the EMI in rural Yucatán is not linked to major local industries or economic activities that could really add value or develop Mexico's industry. Unlike the Asian NICs, Mexico does not export value-added products nor does it have autonomous R&D.

In addition, the EMI depends on FDI to be sustained and renewed, and seems to be extremely sensitive to US economic cycles and vulnerable to Chinese competition. In other words, what the EMI brought to rural Yucatán was very positive simply because the situation in the ex-henequen region was desperate, and rural Mayan workers have lived and worked in difficult conditions for many years. It is highly revealing that agriculture is still the sector that employs the most people in the ex-henequen region. Compared with the former henequen industry, and

taking into consideration unemployment levels and limited local and regional employment opportunities, the maquila in Yucatán has certainly brought improvements. However, that does not make it a development policy, let alone a sustainable development alternative.

From the strong sustainability perspective, very simple arguments could be made to characterise the EMI as unsustainable. For instance, the industry as a whole relies on increased consumerism (worldwide) and is based on economic principles of (TNC's) competition. Both these aspects of the EMI cause tremendous environmental stress and promote cheap manual labour worldwide, as well as income disparities within and between countries. Inputs and merchandise have to travel long distances, which brings considerable environmental costs. Moreover, maquilas serve mainly foreign markets (of DCs), completely overlooking the local markets or the necessities of the poor (worldwide). Based on such logic, the NEM in Mexico is replacing agricultural (or any other development) policy.

Therefore, rather than indicating improvements in Mexican society and its economy, the development of the EMI — in Mexico and in Yucatán — indicates how the NEM has constrained Mexico's alternative economic possibilities, and subjected Mexico's interests to economic globalisation processes and the interests of the USA and TNCs. The strong (and permanent) limitations of the NEM in Mexico would appear its failure to respond to local markets — which is often a strong sustainability claim — or to develop diverse sectors of the economy.

The literature on the maquila showed that although the maquila is without a doubt a more varied and dispersed phenomenon than it was in its early days, the sector still mainly employs young workers who earn a low wage and perform low-skilled work for a relatively short period of time. Like at Monty, working conditions have improved and many more maquiladoras use high-tech machinery and employ relatively more skilled workers than in the past. However, this has definitely not resulted in the modernising of local industry, let alone the Mexican economy in overall. In fact, too many maquiladoras seem to remain labour intensive and low value added, just like Monty.

Perhaps most importantly, the EMI seems to have permanently relied on a massive labour pool (and thus, on unemployment) just like Monty does in the ex-henequen region. Although it is often argued— by maquila managers— that the industry does not discriminate on the basis of age, older workers simply do not work in the maquila (or at Monty). Low paid, low skilled

employment for the young and a large labour pool have fuelled the expansion of the maquila in the ex-henequen region, and arguably in Mexico. Competing with China on that domain has certainly not been easy, as the most recent maquila crisis proved.

The Monty case seems to add to the series of works that emphasise the precariousness of maquila employment since its early days. As was noted decades ago by Fernández-Kelly (1983), and more recently by Carrillo (2001) (for clothing and electric/electronic maquiladoras in the north): 'maquila workers tend to quit if minimal advantages in an alternative job are perceived'. In addition, maquila workers seem to come and go from work, suggesting that periods of rest or temporary retirement are common in the sector and contribute to high turnover rates.

9.1 Reflections on the Research

General Comments on the Limitations of this Research

The Monty case proved to be an interesting one to document further the impact of the maquila, this time in a semi rural environment. To my knowledge, very few works have set out to document the economic, social and environmental impact of one particular maquiladora, let alone a maquiladora located in a region like the ex-henequen region. This thesis hopefully provided a complete picture of the impact of Monty — and to a lesser extent the impact of the EMI in rural Yucatán.

Certainly, collecting data of a different nature and the integration of a case study proved to be a challenging and enriching exercise, through which I hope to contribute to diverse strands of literature and themes, and more particularly to the field of human geography. Although the realities of fieldwork constrained data collection, interviews and questionnaires provided sufficient reliable evidence to complete the objectives that I set myself when initiating this research. On the one hand, a great effort was made to apply GTM. On the other hand, the overall findings proved to be coherent and pertinent to diverse strands of the existing literature.

The data I collected enabled me to compare the Monty case to other cases found in the literature on the maquila. Interviews with state and federal officials from environmental and development agencies provided valuable information on the Mexican government's approach to sustainable

development and on the Monty case. INEGI and CONAPO statistics satisfactorily completed the picture on the economic and demographic impact of the EMI in the ex-henequen region.

However, some additional material would enrich this research, in particular a series of in-depth interviews. In-depth interviews with the Monty workers and former Monty workers could have shed some light on the reasons why workers quit after only a few years of work at Monty; they may have provided further information on the family dynamics and earnings of the Monty workers; and given more accurate information on how long they worked at the plant and what they do next. In-depth interviews with Monty workers and ex-Monty workers would have, without a doubt, provided valuable information to complement questionnaire data and support (or contradict) my interpretations and findings. Another option I would consider for further research would be to compare the Monty case to that of a smaller clothing maquiladora in the ex-henequen region. It might have also been useful to find out more about the concentrations of pollutants in water discharged by Monty.

Follow up Work

Thus, follow up work could be in the form of in-depth interviews with Monty workers (and former Monty workers). An analysis of changes in the Monty workforce (age, sex, and civil status) may provide valuable information on the evolution of maquila employment in the region, upon which predictions of subsequent developments could be made. Shopping-basket comparisons between maquila and non-maquila workers could provide interesting evidence on the spending capabilities that the maquila has brought to the ex-henequen region. More information on the maquila worker's spending habits could shed light on the aggregate economic impact of the maquila in the region and on the development of local markets. A follow-up examination of Monty's environmental file and the building of a sanitary land fill site in Motul might also be of particular interest. A comparative study of the Monty case in the ex-henequen region with another 'extremely large' maquiladora located in the south or east of the Yucatán peninsula might also allow one to identify patterns of similarities and differences between clothing maquila firms and plants, and perhaps to draw more definitive conclusions on the EMI in rural Yucatán.

Contribution to the Theory

My findings support (and are supported by) other works on the maquila industry mainly, but also by works dealing with other peripheral topics related to the Monty case. The characteristics of rural labour markets in Mexico, agricultural policy under the NEM, low-income household survival strategies, work and gender, environmental policy and regional development policy are all topics that have been examined in some depth in this thesis.

As we have seen, constant references were made to the existing literature on the maquila to support and contrast my findings. Therefore, the most obvious contribution of this work is to the literature on the maquila and notably to the economic, social and environmental aspects of that industry. The case study that I developed might also be of interest for those carrying out research on regional development policy in Mexico, NICs and developing countries.

Given that the Monty plant was established in a poor, semi-rural environment, this thesis can also contribute to the literature on rural labour markets and poverty alleviation policies for rural areas in Mexico. The section on the environment showed how the Mexican government endeavours to monitor industry and revealed the weaknesses of the so-called 'law enforcement approach' for a country like Mexico. Moreover, it provided a clear illustration of how Monty had, indeed, few economic incentives to respect local environmental norms, and thus committed the same serious environmental offences on more than one occasion.

The environmental and health risks brought by Monty are by no means negligible and contradict the pollution halo hypothesis. The Monty case has shown that 'corporate responsibility' and 'self-regulatory' measures are not enough to assure a minimal level environmental protection. Therefore, this thesis can also provide useful evidence for those interested in environmental policy in Mexico and, more generally, on the impact of FDI on sustainable development. Since this research was inspired by Third World Political Ecology principles, I have aimed to add to the works that emphasise the weaknesses of mainstream sustainable development approaches under neoliberalism.

References

Adams 2002, "Sustainable development?," in *Geographies of Global Change: remapping the world*, 2nd edn, R. J. Johnston, P. Taylor, and M. Watts, eds., Blackwell.

Albornoz 2000, *El Comportamiento Ambiental de las Maquiladoras en Yucatán,* Departamento de Manejo y Conservación de Recursos Naturales, Universidad Autónoma de Yucatán (UADY).

Amozurrutia 1989, "Ahorro en las empresas maquiladoras por empleo de mano de obra mexicana," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, A. González and E. R. Barajas, eds., Fundación Friedrich Ebert, Tijuana, B.C., México, pp. 211-226.

Anderson, J. B. 1990, "Maquiladoras in the Apparel Industry," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 103-116.

András, S. and Láng, I. 2005, "The Literature Aftermath of the Brundtland Report 'Our Common Future'. A Scientometric Study Based on Citations in Science and Social Science Journals", *Environment, Development and Sustainability*, vol. 7, no. 1, pp. 1-8.

Aron, F. N. 1989, "Política de estabilización, maquiladora y el GATT," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundación Friedrich Ebert, Tijuana, B.C., México, pp. 247-266.

Bair, J. 2001, "Local Cluster in Global Chains: The Causes and Consequences of Export Dynamism in Torreon's Blue Jeans Industry", *World Development*, vol. 29, no. 11, pp. 1885-1903.

Barajas, E. R. 1989, "Complejos industriales en el sur de Estados Unidos y su relación con la distribución espacial y el crecimiento de los centros maquiladores en el norte de México," in *Las maquiladoras: ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundación Friedrich Ebert, Tijuana, B.C., México, pp. 67-104.

Barkin, D. 1998, "Sustainability: The Political Economy of Autonomous Development", *Organization and Environment*, vol. 11, pp. 5-32.

Barney, G. and Strauss, A. 1967, *The discovery of grounded theory* Aldyne de Gruyter, NY.

Bartelmus, P. 1994, *Environment Growth and Development: the Concepts and Strategies of Sustainable Development* Routledge, London.

BBC. 2007a, BBC news channel one.
Ref Type: In Press

BBC. 2007b, Stern report. BBC news channel one.
Ref Type: In Press

Bebbington, A. 2003, "Global Networks and Local Developments: Agendas for Development Geography", *Tijdschrift voor Economische en Sociale Geografie*, vol. 94, No. 3, pp. 297-309.

Beck, U. 1997, "Subpolitics Ecology and the Disintegration of Institutional Power", *Organization and Environment*, vol. 10, pp. 52-65.

Beck, U. 1995, *Ecological Politics in an Age of Risk* Blackwell Publishers.

Blaut, J. M. 1993, *The Colonizer's model of the World Geographical Difusionism and Eurocentric History* The Guilford Press, N.Y.

Bookchin, M. 1994, *Which way for the Ecology Movement? Essays by Murray Bookchin*, 1st edn, AK Press, US.

Bowen, M., Kontuly, T., and Hepner, G. 1995, "Environmental Auditing: Estimating Maquiladora Hazardous Waste Generation on the U.S./Mexico Border", *Environmental Management*, vol. 19, pp. 281-296.

Bowles, P. and Moreno-Brid, J. 2006, *The political economy of Mexico's dollarization debate*, CEPAL publications, Mexico, viewed July 2006, <www.cepal.org>.

Brannon, J. and Baklanoff, E. 1987, *Agrarian reform and Public Enterprise in Mexico* The University of Alabama Press, Alabama.

Brannon, J. and Gilbert, J. 1999, *Land Labor and Capital in Modern Yucatán: Essays in Regional History and Politcal Economy* University of Alabama Press, Alabama.

Brannon, J., James, D., and Lucker, W. 1994, "Generating and sustaining backward linkages between maquiladoras and local suppliers in northern Mexico", *World Development*, vol. 22, pp. 1933-1945.

Bruntland, G. 1987, *Report of the World Commission on Environment and Development "Our Common Future"*, UN, A/42/427 viewed 2004, <http://documents-dds-ny.un.org/doc/UNDOC/GEN/N87/184/67/img/N8718467.pdf?OpenElement>.

Bryant, R. and Bailey, S. 1997, *Third World Political Ecology*, 1st edn, Routledge, NY, London.

Canto, S. R. 2001, *Del henequén a las maquiladoras. La política industrial en Yucatán 1984-2001.*, 1st edn, Instituto Nacional de Administración Pública-UADY, Mexico city.

Canto, S. R. and Cruz, 2004, P. E. Las maquiladoras en Yucatán y el Plan Puebla-Panamá. Comercio Exterior 54[4], 328-335.
Ref Type: Magazine Article

Carrillo, J. 1989a, "Transformaciones en la industria maquiladora de exportación," in *Las Maquiladoras: ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundación Friedrich Ebert, Tijuana, B.C, México, pp. 37-54.

Carrillo, J. 1989b, *Reestructuración industrial: Maquiladoras en la frontera norte México-Estados Unidos*, 1st edn, Consejo Nacional para la Cultura y las Artes, Mexico city.

Carrillo, J. and Hualde, A. 1996, "Maquiladoras de tercera generación. El caso de Delphi-General motors. Third generation "maquilas". The Delphi-general motors case", *Espacios*, vol. 17, no. 3, viewed 2002, <http://www.revistaespacios.com/a96v17n03/50961703.html>.

Carrillo, J. and Hualde, A. 1997, Maquiladoras de tercera generación: el caso Delphi Genberal Motors. Comercio Exterior 47[9], 747-757.
Ref Type: Magazine Article

Carrillo, J. and Santibañez, R. J. 2001, *Rotación de personal en las maquiladoras*, 2nd. edn, Plaza y Valdés, Tijuana.

Castilla, B. and Torres, B. 1991, "Las maquiladoras en Yucatán," in *Las Empresas y los Empresarios en el México Contemporáneo*, Enlace Grijalbo, Mexico city, pp. 559-588.

Castilla, B. and Torres, B. 1994, "Un Nuevo Impulso a la Industria Maquiladora," in *Yucatán en el Siglo XXI, Tomo II*, J. Sierra and G. Huchim, eds., Compañía Editorial de la Península, Mérida, pp. 287-307.

Castilla, B. and Torres, B. 1999a, "Las relaciones laborales en Yucatán," in *Cambios en las relaciones laborales. Enfoque sectorial y regional. Vol. II.*, UNAM; UAM-Xochimilco, Mexico city, pp. 565-589.

Castilla, B. and Torres, B. 1999b, Yucatán: la otra frontera. Certeza Económica Aug-Sep[13], 78-83. Mérida, Yucatán.
Ref Type: Magazine Article

Castilla, B. and Torres, B. 2000, Mujeres en Yucatán: Nuevas figuras obreras a partir del modelo maquilador extranjero. Separata de la revista de Dialectología y Tradiciones Populares 46[2], 197-235. Consejo Superior de Investigaciones Científicas Instituto de la Lengua Española.
Ref Type: Magazine Article

Castilla, B. 2002, *Nuevas Tecnologías y cambio cultural: el ejemplo de las obreras mayas de una maquiladora en Yucatán, México.*, University of Perpignan.

Castilla, B. 2004, Mujeres Mayas en la robótica y líderes de la comunidad: tejiendo la modernidad. Revista Electrónica Centro de Estudios la Mujer en la Historia de América Latina.
Ref Type: Electronic Citation

Castilla, B. 2006, Unpublished data.
Ref Type: Personal Communication

CEPAL. 2006, ECLAC, Statistical Yearbook for Latin America. CEPAL, viewed September 2006, <http://www.eclac.cl/cgi-bin/getProd.asp?xml=/publicaciones/xml/4/28074/P28074.xmlandxsl=/deype/tpl-i/p9f.xslandbase=/deype/tpl/top-bottom.xsl>.
Ref Type: Data File

Chant, S. 1991, *Women and survival in Mexican cities: perspectives on gender, labour markets and low income households*, 1st edn, Manchester University Press, Manchester.

Chant, S. 2004, "Urban livelihoods, employment and gender," in *Latin America transformed: Globalization and Modernity*, 2nd edn, R. Gwynne and C. Kay, eds., Hodder Arnold, London, pp. 210-228.

Chopra, K. 2001, "Social capital and sustainable development: the role of formal and informal institutions in a developing country", Institute of economic growth, University Enclave, Delhi, India, pp. 1-20. Viewed 2005, <http://iegindia.org/dis_kc_40.pdf>.

Chrispin, B. R. 1990, "Employment and Manpower Development in the Maquiladora Industry: Reaching Maturity," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 71-90.

Clark, D. P., Sawyer, W. C., and Sprinkle, R. L. 1990, "Determinants of Industry Participation in Offshore Plants: The Case of the Maquiladoras in Mexico," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 91-102.

Clement, N. and Jenner, S. 1989, "La industria maquiladora de México y la economía de California," in *Las maquiladras: ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundación Friedrich Ebert, Tijuana, B.C., México, pp. 105-136.

Colmenares, M. 2006, "Segregación en el empleo por sexo: salario y ocupación en los modelos de industrialización de las regiones centro-occidente y fronteriza", *Frontera Norte*, vol. 18, no. 35, pp. 87-110.

CONAPO. 2007a, Demographic data. Viewed 2005, <http://www.conapo.gob.mx/pnp_pdf/046.pdf>.
Ref Type: Data File

CONAPO. 2007b, Demographic data. CONAPO, annual updating.
Ref Type: Electronic Citation

Connelly, J. and Smith, G. 2002, "Valuation of the Environment," in *Politics and the Environment: From Theory to Practice*, Routledge, Oxford.

Contreras, O., Carrillo, J., García, H., and Olea, J. 2006, "Desempeño laboral de las maquiladoras: una evaluación de la seguridad en el trabajo", *Frontera Norte*, vol. 18, no. 35, pp. 55-86.

Cooney, P. 2001, "The Mexican Crisis and the Maquiladora Boom: A paradox of Development or the Logic of Neoliberalism?", *Latin American Perspectives*, vol. 28, no. 118, pp. 55-83.

Cravey, A. J. 1997, "The politics of Reproduction: Households in the Mexican Industrial transition", *Economic Geography*, vol. 73, no. 2, pp. 166-186.

Cunningham, W. 2001, "Breadwinner versus caregiver: labor force participation and sectoral choice over the Mexican business cycle," in *The economics of gender in Mexico: work, family, state and market*, E. G. Katz and M. C. Correia, eds., The World Bank, Washington, D.C., pp. 85-129.

Cypher, J. 2001, "Developing Desarticulation Within the Mexican Economy", *Latin American Perspectives*, vol. 28, no. 118, pp. 11-37.

De la O, M. 2000, "Ciudad Juárez: La conformación de una ciudad maquiladora," in *El eslabón industrial: Cuatro imágenes de la maquila en México*, Nuestro Tiempo, Mexico city.

De la O, M. 1994, *Inovación tecnológica y clase obrera. Estudio de la industria maquiladora eletrónica R.C.A.* UAM-Ixt; Miguel Angel Porrúa, Mexico city.

de Teresa, A. 1992, *Crisis Agrícola y Economía Campesina: el caso de los productores de henequen en Yucatán* Miguel Ángel Porrúa Editorial, Mexico city.

Deepak, M., Ashoka, M., and Panini, A. 2001, "Private Capital flows and Growth", *Finance and Development*, vol. 38, no. 2, pp. 54-57.

del Castillo, G. 1989, "El subdesarrollo mexicano, la maquila y el GATT, la música del tango de Rosa de Luxemburgo," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., México, pp. 227-234.

Demetrios, G. P. 2002, The Shifting Expectations of Free Trade and Migration. 39-59.Carnegie Endowment for International Peace. NAFTA's promise and Reality, viewed January 2002, http://www.carnegieendowment.org/pdf/files/NAFTA_Report_ChapterTwo.pdf.
Ref Type: Internet Communication

Demmers, J. 1998, *Friends and Bitter Enemies: Politics and Neolieral Reform in Yucatán, Mexico* Utrecht.

Dussel, E. and Xue, L. 2005, China: competencia comercial con México y Centroamérica. Comercio Exterior 55[3], 282-289. México city, Banco Nacional de Comercio Exterior.
Ref Type: Magazine Article

Dzul, J. M. 2006, Motul a través de su historia. Archivo general del estado de Yucatán.
Ref Type: Unpublished Work

Elliot, J. 1994, *An Introduction to Sustainable Development*, 2nd edn, Routledge, London.

Esteva, G. and Prakash, M. 1992, "Grass roots resistence to Sustainable Development: Lessons from the Banks of the Narmada", *The Ecologist*, vol. 22, pp. 45-51.

Fatemi, K. 1990a, "Introduction," in *The Maquiladora Industry: economic solution or problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 3-18.

Fatemi, K. 1990b, *The Maquiladora Industry Economic Solution or Problem?* Praeger, NY.

Faust, B. 2001, "Maya environmental successes and failures in the Yucatan Penninsula", *Environmental Science and Policy*, vol. 4, no. 4-5, pp. 153-169.

Feenstra, R. 1997, "Foreign direct investment and relative wages: Evidence from Mexico's maquiladoras", *Journal of International Economics*, vol. 42, no. 3-4, pp. 371-393.

Fernández-Kelly, P. 1983, *For we are sold, I and my people. Women and industry in Mexico's Frontier* State University of New York Press, Albany.

Fernández-Kelly, P. 1989, "Asia y Frontera México Estados Unidos," in *Reestructuración industrial Maquiladoras en la Frontera México-Estados Unidos*, 1st edn, J. Carrillo, ed., Consejo Nacional para la Cultura y las Artes, Mexico city, pp. 125-182.

Financial Times. 2004, Financial Times , 20. 7-20-2004.
Ref Type: Newspaper

Fleck, S. 2001, "A gender perspective on Maquila employment and wages in Mexico," in *The economics of gender in Mexico: work, family, state and market*, E. G. Katz and M. C. Correia, eds., The World Bank, Washington, D.C., pp. 133-169.

Fleck, S. and Sorrentino, C. 1994, "Employment and unemployment in Mexico's labour force", *Monthly Labor Review* pp. 3-31.

Flowerdew, R. and Martin, D. 2005, *Methods in Human Geography*, 2nd edn, Pearson Education Limited, Essex.

Fortanier, F. and Maher, M. 2001, "Foreign Direct Investment and Sustainable Development", *Financial Market Trends*, vol. 79.

Föster, M. and Pearson, M. 2002, "Income distribution and poverty in the OECD area: trends and driving forces", *OECD Economic Studies*, vol. 34, pp. 8-36.

Friedmann, J. 1992, *Empowerment The Politics of Alternative Development*, 1st edn, Blackwell Publishers.

Gabbert, W. 2004, *Becoming Maya: Ethnicity and Social Inequality in Yucatán since 1500* The University of Arizona Press, USA.

Galbraith, J. and Garcilazo, E. 2004, *Measuring Inequality: a practical workshop on theory and technique* San José, Costa Rica.

García de Fuentes, A., De la O, M., Quintero, C., and Morales, J. 2000, *El eslabón industrial Cuatro imágenes de la maquila en México* Nuestro Tiempo, Mexico City.

García de Fuentes, A. and Morales, J. 2000, "La maquila en la península de Yucatán," in *El eslabón industrial: Cuatro imágenes de la maquila*, J. Morales, ed., Editorial Nuestro Tiempo, Mexico city.

García, A. and Castilla, B. 1980, El Yucatán Colonial: Mujeres Telares y Patíes. Yucatán, historia y economía 4[20], 51-68. Mérida, Yucatán, DEES-UADY.
Ref Type: Magazine Article

Gardiner, R. 2001, Foreign Direct Investment: a lead driver for Sustainable development? Towards Earth Summit, Economic Briefing Series No.1, viewed 2001, <http://www.unedforum.org/policy/economic/fdi.pdf>.
Ref Type: Electronic Citation

Gaventa, J. 1989, "La influencia de los factores ambientales en la movilidad del capital. Estudio de caso de la region de los Montes Apalaches," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., México, pp. 185-204.

George, E. Y. 1990, "What Does the Future Hold for the Maquiladora Industry?," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 219-234.

Gilbert, A. 1990, *Latin America* Routledge, London.

Gilbert, A. 1992, "Third World Cities: Housing, Infrastructure and Servicing", *Urban Studies*, vol. 29, pp. 435-460.

Gilbert, A. 1993, "Third World Cities: The Changing National Settlement System", *Urban Studies*, vol. 30, pp. 721-740.

Gilbert, A. 1994a, "Third World Cities: Poverty, Employment, Gender Roles and the Environment in a time of restructuring", *Urban Studies*, vol. 31, no. 4, pp. 605-633.

Gilbert, A. 1994b, *The Latin American city* Russell Press, Nottingham.

Gilbert, A. 2004, "The urban revolution," in *Latin America transformed: Globalization and Modernity*, 2nd edn, R. Gwynne and C. Kay, eds., Hodder Arnold, London, pp. 94-114.

Gilbert, A. 2007, Inequality and Why It Matters. Geography Compass, 422-447. Blackwell. Ref Type: Electronic Citation

Gillbreath, J. 1992, "Financing Environmental and Infrastucture Needs on the Texas-Mexico Border: Will the Mexican-U.S. Integrated Border Plan Help?", *The Journal of Environment and Development*, vol. 1, pp. 151-175.

Goldrich, D. and Carruthers, D. 1992, "Sustainable Development in Mexico?: The International Politics of Crisis or Opportunity", *Latin American Perspectives*, vol. 19, no. 72, pp. 97-122.

González de la Rocha, M. 2001, "From the Resources of Poverty to the Poverty of Resources", *Latin American Perspectives*, vol. 28, no. 119, pp. 72-100.

González de la Rocha, M. 2006, "Vanishing Assets: Cumulative Disadvantage among the Urban Poor", *The ANNALS of the American Academy of Political and Social Science*, vol. 606, pp. 68-94.

González, A. 1989, "Eliminación de las fracciones 806.30 y 807.00, la crisis mexicana y el futuro de las maquiladoras," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., México, pp. 235-246.

González, A. and Barajas, E. R. 1989b, *Las maquiladoras: ajuste estructural y desarrollo regional*, 1st edn, Fundación Friedrich Ebert, Tijuana, B.C., México.

González, A. and Barajas, E. R. 1989a, "Retos para el aprovechamiento y la coordinación de la industria maquiladora," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., México, pp. 323-339.

Graham, A. and Skinner, C. 1993, *Handbook for Research Students in the Social Sciences* The Falmer Press.

Graizbord, B. and Ruiz, C. 1996, "Recent Changes in the Economic and Social Structure of Mexico's Regions," in *Changing Structure of Mexico: political, social, and Economic Prospects*, L. Randall, ed., M.E. Sharpe, USA.

Gropp, R. and Kostial, K. 2001, "FDI and Corporate Tax Revenue: Tax Harmonisation or Competition", *Finance and Development*, vol. 38, no. 2, p. 10.

Grossman, P. 2000, "Corporate Interest and Trade Liberalization: The North American Free Trade Agreement and Environmental Protection", *Organization and Environment*, vol. 13, pp. 61-85.

Grundwald, J. 1989, "Internacionalización de la Industria: Los vínculos entre México y los Estados Unidos," in *Reestructuración Industrial Maquiladoras en la Fontera México-Estados Unidos*, J. Carrillo, ed., Consejo Nacional para la Cultura y las Artes, México, D.F..

Gugliotta, G. 2007, The Maya Glory and Ruin. National Geographic 212[2], 68-109.
Ref Type: Magazine Article

Gutiérrez, N. R. 1999, "The Scope and Limits of Mexican Environmental Law", *Borderlines 61*, vol. 7, no. 10.

Gwynne, R. 2004a, "Structural reform in South America and Mexico: Economic and Regional Perspectives," in *Latin America transformed: Globalization and Modernity*, 2nd edn, R. Gwynne and C. Kay, eds., Hodder Arnold, London, pp. 39-63.

Gwynne, R. 2004b, "Clusters and commodity chains: Firm Responses to Neoliberalism in Latin America", *Latin American Research Review*, vol. 39, no. 3, pp. 243-255.

Gwynne, R. 2004c, "Political economy, resource use and Latin American environments", *Singapore Journal of Tropical Geography*, vol. 25, no. 3, pp. 247-260.

Gwynne, R. and Kay, C. 2004a, *Latin America transformed: Globalization and Modernity* Hodder Arnold, London.

Gwynne, R. and Kay, C. 2004b, "Latin America transformed: globalization and neoliberalism," in *Latin America transformed: Globalization and Modernity*, 2nd edn, R. Gwynne and C. Kay, eds., Hodder Arnold, London, pp. 3-19.

Hay, I. 2000, *Qualitative research methods in human geography* Oxford University Press, Melbourne.

Hervik, P. 1999, *Mayan People Within and Beyond Boundaries* Hardwood academic publishers, Amsterdam.

Hilker, H. T. 1989, "El dilema político-estructural de la maquiladora: causas, perspectivas y consecuencias político-económicas," in *Las Maquiladoras: Ajuste esructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., México, pp. 285-300.

ILO. 2007, International Labour Organisation Statistics. ILO, annual updating.
Ref Type: Data File

IMF. 1999, World Economic Outlook International Financial Contagion. IMF, regular updating.
Ref Type: Electronic Citation

INEGI. 2004, Estadísticas económicas, Censo Nacional de Población y Vivienda 1990 y 2000. [Viewed 2001 to 2007, <http://www.inegi.gob.mx>].
Ref Type: Data File

INEGI. 2007, Estadísticas económicas (IME), Censo Nacional de Población y Vivienda 1990 y 2000, Conteo Nacional de Población y Vivienda 2005. [Viewed 2001 to 2007, <http://www.inegi.gob.mx>].
Ref Type: Data File

Islas, O. L. 2004, Nueva reglamentación para la industria maquiladora. Comercio Exterior 54[1], 80-87.
Ref Type: Magazine Article

Katz, E. G. and Correia, M. C. 2001, *The economics of gender in Mexico: work, family, state and market* The World Bank, Washington, D.C.

Kay, C. 2004, "Rural livelihoods and peasant futures," in *Latin America transformed: Globalization and Modernity*, 2nd edn, R. Gwynne and C. Kay, eds., Hodder Arnold, London, pp. 232-249.

Kelly, T. J. 2001, "Neoliberal Reforms and Rural Poverty", *Latin American Perspectives*, vol. 28, no. 118, pp. 84-103.

Kopinak, K. 1995, "Gender as a Vehicle for the Subordination of Women Maquiladora Workers in Mexico", *Latin American Perspectives*, vol. 22, no. 1, pp. 30-48.

Kopinak, K. and Barajas, M. 2002, "Too Close for Comfort? The Proximity of Industrial Hazardous Wastes to Local Populations in Tijuana, Baja California", *The Journal of Environment and Development*, vol. 11, pp. 215-246.

Kramer, K. 2005, *Maya children* Harvard University Press, Boston.

Labrecque, M. F. 2005, "Cultural Appreciation and Economic Depreciation of the Mayas of Northern Yucatan, Mexico", *Latin American Perspectives*, vol. 34, no. 143, pp. 87-105.

Leff, E. 2002, *Epistemología Ambiental*, 1st edn, Cortéz, Sao Paulo.

Liverman, D., Varady, R., Chávez, O., and Sánchez, R. 2002, *Temas ambientales a lo largo de la frontera entre estados unidos y Mexico: impulsores de cambio y respuestas de ciudadanos e instituciones* El Colegio de Mexico, Mexico city.

Logsdon, J. and Husted, B. 2000, "Mexico's Environmental Performance Under NAFTA: The First 5 Years", *The Journal of Environment and Development*, vol. 9, pp. 370-383.

Loungani, P. and Razin, A. 2001, "How Beneficial is FDI for Developing Countries", *Finance and Development*, vol. 38, no. 2, pp. 6-9.

MacLeod, M. and Wasserstrom, R. 1983, *Spaniards and Indians in Southern Mesoamerica* University of Nebraska Press.

Maertz, C. 2003, " A turnover model for the Mexican maquiladoras", *Journal of Vocational Behavior*, vol. 63, no. 1, pp. 111-135.

Marchack, P. 1998, "Environment and Resource Protection: Does NAFTA Make a Difference?", *Organization and Environment*, vol. 11, pp. 133-154.

Markandya, A. 2001, "Poverty Alleviation and Sustainable Development Implications for the Management of Natural capital", The International Institute for Sustainable Development, viewed 2001, <http://www.iisd.org/pdf/pe_markyanda_presentation.pdf>.

McCaughan, E. 1993, "Mexico's Long Crisis: Toward New regimes of Accumulation and Domination", *Latin American Perspectives*, vol. 20, pp. 6-31.

Mejías, P. 2002, Efectos Internacionales en las maquiladoras de México. El Colegio Mexiquense, viewed 2002, <http://www.cmq.edu.mx/docinvest/document/DI69258.pdf>.
Ref Type: Electronic Citation

Mena, J. 2003, Monty managers.
Ref Type: Internet Communication

Menchaca, H. and Solis, R. 1989, "El desarrollo de la industria maquiladora de exportación en Nuevo León," in *Las Maquiladoras:Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., Mexico, pp. 137-154.

Mercado, G. A. and Fernández, O. A. 2002, La emisión de contaminantes industriales en las entidades federativas de México. Comercio Exterior 52[3], 208-215.
Ref Type: Magazine Article

Mestrum, F. 2003, "Poverty Reduction and Sustainable Development", *Environment, Development and Sustainability*, vol. 5, pp. 41-61.

Molina, D. 1993, "A Comment on Whether Maquiladoras Are in Mexico for Low Wages or to Avoid Pollution Abatement Costs", *The Journal of Environment and Development*, vol. 2, p. 221.

Montalvo, C. C. 2004, "Challenges for Cleaner Production in International Manufacturing Subcontracting: The case of the Maquiladora Industry in Northern Mexico", *Frontera Norte*, vol. 16, no. 31, pp. 69-99.

Morales, J. 2000, "Maquila 2000," in *El eslabón industrial: Cuatro imágenes de la maquila en México*, Nuestro Tiempo, México city.

Morris, S. and Passé-Smith, J. 2007, "What a difference a crisis makes NAFTA, Mexico and the United States", *Unknown*.

Moseley, E. 1980, *Yucatán: A world apart* The University of Alabama Press.

Mumme, S. 1992, "System Maintenance and Environmental reform in Mexico: Salina's Preemptive Strategy", *Latin American Perspectives*, vol. 19, no. 1, pp. 123-143.

Mumme, S., Bath, R., and Assetto, V. 1988, "Political Development and Environmental Policy in Mexico", *Latin American Research Review*, vol. 23, no. 1, pp. 7-34.

Mumme, S. and Duncan, P. 1998, "The Commission for Environmental Cooperation and Environmental Management in the Americas", *Journal of Interamerican Studies and World Affairs*, vol. 39, no. 4, pp. 41-62.

Mungaray, A. 1989, "Perspectivas de las actividades de la maquila internacional en la frontera norte de México," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., Mexico, pp. 317-322.

Navarrete, J. M. and León, C. 2005, La participación municipal en programas federales medio ambientales. El caso de los residuos sólidos municipales. Comercio Exterior April.
Ref Type: Magazine Article

Negrete, M. J. 1989, "Reconversión industrial e integración de la frontera: el ejemplo de Tijuana-San Diego," in *Las Maquiladoras:ajuste estructural y desarrollo regional*, 1st edn, A. Gonzalez and E. R. Barajas, eds., Fundación Friedrich Ebert, Tijuana, B.C., México, pp. 55-66.

Ochoa, E. and Wilson, T. 2001, "Introduction; Mexico in the 1990s: Economic Crisis, Social Polarization, and Class Struggle Part 1.", *Latin American Perspectives*, vol. 28, no. 3, p. 10.

OECD. 2005, La emigración de mexicanos a Estados Unidos. Comercio Exterior 55[2], 148-165. México city, Banco Nacional de Comercio Exterior.
Ref Type: Magazine Article

OECD. 2007, OECD Annual Report 2006. OECD (on line).
Ref Type: Electronic Citation

Pagán, J. A. and Sánchez, S. M. 2001, "Gender issues in workforce participation and self-employment in rural Mexico," in *The economics of gender in Mexico: work, family, state and market*, E. G. Katz and M. C. Correia, eds., The World Bank, Washington, D.C., pp. 204-224.

Pallemaertz, M. 2003, "Is Multilateralism the Future? Sustainable development or Globalisation as 'a Comprehensive Vision of the Future of Humanity'", *Environment, Development and Sustainability*, vol. 5, pp. 275-295.

Pandit, N. 1996, "The Creation of Theory: A Recent Application of the Grounded Theory Method", *The Qualitative Report*, vol. 2, no. 4. Viewed 2003, <http://www.nova.edu/ssss/QR/QR2-4/pandit.html>.

Parrado, E. 2005, "Economic Restructuring and Intra-Generational Class Mobility in Mexico", *Social Forces*, vol. 84, no. 2, pp. 733-757.

Patch, R. 1993, *Maya and Spaniard in Yucatan, 1648-1812* Stanford University Press, Stanford.

Patrick, J. M. 1990, "The Employment Impact of Maquiladoras Along the U.S. Border," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 57-70.

Peet, R. and Watts, M. 2004, *Liberation ecologies: environment, development, social movements*, 2nd edn, Routledge, London.

Pérez Gabriel, A. M. 1990, "Mexican Legislation Affecting the Maqiladora Industry," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 207-218.

Perry, D., Sanchez, R., Glaze, W., and Mazarp, M. 1990, "Binational Management of Hazardous Waste: The Maquiladora Industry at the US-Mexico Border", *Environmental Management*, vol. 14, pp. 441-450.

Picou, A. and Peluchon, E. 1995, "The Texas-Mexico Maquila Industry: Expectations for the Future", *Journal of Borderlands Studies*, vol. 10, pp. 75-86.

Population Information Program. 2000, Population and the Environment: The Global Challenge. USAID and PIP. [CD-ROM]. Baltimore, US, The Johns Hopkins University School of Public Health.
Ref Type: Data File

Pradilla, E. 1993, "The Limits of the Mexican Maquiladora Industry", *Review of Radical Political Economics*, vol. 25, no. 4, pp. 91-108.

Prock, J. D. and Torres, A. D. 1990, "Debt for Equity Conversion Program and the Maquiladoras," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 171-182.

Prugh, T., Costanza, R., and Daly, H. 2000, *The Local Politics of Global Sustainability* Island Press.

Ramírez, J. C. 2001, Los Modelos de organización en las industrias de exportación en México. Comercio Exterior 51[12], 1121-1131.
Ref Type: Magazine Article

Redclift, M. 2000, *Sustainability Life chances and livelihoods*, 1st edn, Routledge, London.

Reed, N. 2001, *The Caste War of Yucatán* Stanford University Press, Stanford.

Restall, M. 1997, *The Maya World: Yucatec Culture and Society, 1550-1850* Stanford University Press, Stanford.

Reuveny, R. and Li, Q. 2003, "Economic Openess, Democracy, and Home Inequality: An Empirical Analysis", *Comparative Political Studies*, vol. 36, pp. 575-601.

Rivera, M. I. and Maldonado, J. R. 2004, Aprendizaje tecnológico en los proveedores de la industria electrónica, Guadalajara, México. Comercio Exterior 54[3], 196-206.
Ref Type: Magazine Article

Robertson, R. 2000, "Trade Liberalisation and Wage Inequality: Lessons from the Mexican Experience", *The World Economy*, vol. 23, no. 6, pp. 827-849.

Rodríguez-Oreggia, E. and Rodríguez-Pose, A. 2004, "The Regional Returns of Public Investment Poicies in Mexico", *World Development*, vol. 32, no. 9, pp. 1545-1562.

Ruiz, W. and González, S. 2005, Viejas y nuevas funciones de los parques industriales de Tijuana. Comercio Exterior 55[2], 121-131. México city, Banco Nacional de Comercio Exterior.
Ref Type: Magazine Article

Salas, C. 2001, The impact of NAFTA on wages and income in Mexico. NAFTA at Seven-EPI Briefing Paper, viewed 2001, <http://www.epinet.org/briefingpapers/nafta01/mx.html>.
Ref Type: Electronic Citation

Samik-Ibrahim, R. 2000, "Grounded Theory methodology as the research strategy for a developing country", *Forum Qualitative Social Research*, vol. 1, no. 1. Viewed 2003, <http://www.qualitative-research.net/fqs-texte/1-00/1-00samik-e.htm>.

Sánchez, R. 1989, "Contaminación de la industria fronteriza: riesgos para la salud y el medio ambiente," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., Mexico, pp. 155-184.

Sargent, J. and Matthews, L. 2001, "Combining Export Processing Zones and Regional Free Trade Agreements: Lessons from the Mexican Experience", *World Development*, vol. 29, no. 10, pp. 1739-1752.

Scheinman, M. N. 1990a, "Maquiladoras in the Automobile Industry," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 117-134.

Scheinman, M. N. 1990b, "Report on the present status of maquiladoras," in *The Maquiladora Industry: Economic Solution or Problem*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 19-35.

Schoepfle, G. K. and Pérez-López, J. F. 1990, "The impact of Maquiladoras on U.S. National Employment and Employment in Selected Industrial Sectors," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 37-56.

Scott, C. R. and Worley, J. K. 1990, "The Use of Maquiladoras by Non-American Companies: The Case of Japanese Multinationals," in *The Maquiladora Industry: Economic Solution or Problem*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 159-170.

Seema, P. 2004, Introducing Sustainable development in 9 ½ chapters. Seema, P. [CD-ROM]. USA, Leadership for Environment and Development, LEAD.
Ref Type: Data File

Semarnat 2006, *La Gestión Ambiental en México* Semarnat, Mexico city.

Sen, A. 2000, International Conference on "Transition to sustainability", "The ends and means of sustainability". Conference of the World's Scientific Academies, Tokyo, Japan, viewed 2006, <http://www.iisd.org/pdf/sen_paper.pdf>.

Silva, P. 2004, "The new political order: towards technocratic democracies?," in *Latin America transformed: Globalization and Modernity*, 2nd edn, R. Gwynne and C. Kay, eds., Hodder Arnold, London, pp. 157-168.

Simon, J. 1997, *Endangered Mexico: An environment on the edge* The Latin American Bureau (Research and Action), London.

Sklair, L. 1988, *Maquiladoras annotated bilbiography and reseach guide to Mexico's in-bond industry, 1980-1988*, 1st edn, Center for U.S.-Mexican Studies University of California, San Diego.

Sklair, L. 1993, *Assembling for Development* University of California., San Diego.

Sotelo, A. 2004, *Desindustrialización y crisis del neoliberalismo: maquiladoras y telecomunicaciones*, 1st edn, Plaza y Valdés, Mexico.

Spalding, M. 1999, *Sustainable Development in San Diego Tijuana* ??, ?

Special Report. 1984, Yucatán: La otra frontera maquiladora. Expansión , 47-64.
Ref Type: Magazine Article

Staudt, K. 1986, "Economic Change and Ideological Lag in Households of Maquila Workers in Ciudad Juárez," in *The social ecology and economic development of Ciudad Juárez*, G. Young, ed., Westview, Boulder, Colorado.

Stoddard, E. R. 1987, *Maquila Assembly Plants in Northern Mexico*, 1st edn, Texas Western Press, El Paso.

Tiano, S. 1994, *Patriarchy on the Line Labor, Gender and Ideology in the Mexican Maquila Industry* Temple University Press, Philadelphia.

Townsend, J. e. a. 1999, *Women and Power* Zed Books Ltd, NY.

Treiber, H. 1989, "La infuencia de los costos en la mano de obra en el concepto de la inversión extranjera de los empresarios alemanes: desde el punt de vista de las maquiladoras," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., México, pp. 205-210.

UN. 2007a, UN regular updating, viewed 2006, <http://www.unpopulation.org>.
Ref Type: Data File

UN. 2007b, Past Conferences and General Assembly Sessions. Viewed 2005, <http://www.un.org/events/conferences.htm>, <http://www.un.org/esa/sustdev/documents/agenda21/index.htm>.
Ref Type: Internet Communication

US Agency for International Development 1998, *1998 Annual Performance Report* Viewed 2005, <http://pdf.usaid.gov/pdf_docs/pnace650.pdf>.

Vázques Pasos, L. 1999, *Identitad, henequén y trabajo: Los desfbradores de Yucatán* El Colegio de México, Mexico city.

Vela, S. R. 2002, *Breve Reseña de la Industria Henequenera y sus Relaciones con el Exterior (apuntes para el estudio de la historia económica de Yucatán)* Universidad Tecnológica Metropolitana; Maldonado editores del Mayab, Mérida.

Villafuerte, D. 2004, Más allá del Plan Puebla-Panamá. Comercio Exterior April.
Ref Type: Magazine Article

Villanueva, E. 1984, *Asi tomamos las tierras: Henequén y Haciendas en Yucatán durante el Porfiriato* Maldonado Editores, INAH-Yucatán.

Warner, J. A. 1990, "The Sociological Impact of the Maquiladoras," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 183-198.

WB 2006, *Growth Prospects Are Strong, but, Social, Environmental Pressures from Globalization Need More Attention.*

Weiler, S. and Zerlentes, B. 2003, "Maquila sunrise or sunset? Evolutions of regional production advantages", *The Social Science Journal*, vol. 40, no. 2, pp. 283-297.

Wells, A. 1985, *Yucatán's Gilded Age: haciendas, henequen, and Interbational Harvester 1860-1915* University of New Mexico Press.

Wilhems, C. 1989, "Posibilidades de exportación de México a la República Federal Alemana y los países del Mercado Comun Europeo: aspectos de producción e institucionales," in *Las Maquiladoras: Ajuste estructural y desarrollo regional*, 1st edn, A. González and E. R. Barajas, eds., Fundacion Friedrich Ebert, Tijuana, B.C., México, pp. 267-284.

Wilson, P. 1996, *Las nuevas maquiladoras de México: exportación y desarrollo local* Universidad de Guadalajara, Guadalajara.

Wilson, P. 1990, "The New Maquiladoras: Flexible Production in Low Wage Regions," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 135-158.

Wilson, T. 2002, "The masculinisation of the Mexican maquiladoras", *Review of Radical Political Economics*, vol. 34, pp. 3-17.

World Bank. 2002, Urban Poverty in Mexico. WB (on line).
Ref Type: Electronic Citation

WTO 2003, *International Trade Statistics 2003* Viewed 2005, <http://www.wto.org/english/res_e/statis_e/its2003_e/its2003_e.pdf>.

Yin, R. 1989, *Case Study Research: Design and Methods* Sage, London.

Young, G. 1986a, "The Development of Ciudad Juárez: Urbanization, Migration, Industrialization," in *The social ecology and economic development of Ciudad Juárez*, G. Young, ed., Westview, Boulder, Colorado.

Young, G. 1986b, *The social ecology and economic development of Ciudad Juárez* Westview press, Boulder Colorado.

Zaman, M. R. 1990, "The Impact of Maquiladoras on Mexico's Balance of Payments," in *The Maquiladora Industry: Economic Solution or Problem?*, 1st edn, K. Fatemi, ed., Praeger, NY, pp. 199-206.

Zamorano, C. 2006, "Ser inmigrante en Ciudad Juárez: itinerarios residenciales en tiempos de la maquila", *Frontera Norte*, vol. 18, no. 35, pp. 29-54.

Zarsky, L. 1999, "International Investment Rules and the Environment: Stuck in the mud?", *International Relations Center (IRC), Foreign Policy in Focus*, vol. 4, no. 22. Viewed 2001, <http://www.fpif.org/briefs/vol4/v4n22env.html>.

Zarsky, L. and Gallagher, K. 2004, NAFTA, Foreign Direct Investment, and Sustainable Industrial Development in Mexico. Americas Program at the International Relations Center, viewed 2004, <http://americas.irc-online.org/am/1668>.
Ref Type: Electronic Citation

APPENDIX

Questionnaire 1

Monty Workers at the Plant

Date:

Name:

Address (indicate the name of your community):

PERSONAL CHARACTERISTICS

1. ¿How old are you?
2. ¿Which is your Sex?
   □ Feminine □ Masculin
3. ¿Where were you born?
   Specify _____
4. ¿Where do you live?
   Specify _____
5. If you changed your place of residency indicate why did you do it
   Specify _____
6. ¿What languages do you speak?
   □ spanish and maya □ only maya □ only spanish
   □ other (specify ____)
7. Indicate which is the language you use more often in
   your house _____ at work _____ the community _____
8. Civil Status
   □ single □ married □ divorced □ living with partner □ widow

FORMER JOB

9. ¿Have you worked in agriculture?
   □ for years □ occasionally □ I learned to □ never
10. ¿When did you stop working in it?
    □ I haven't □ for months □ for years
11. ¿What was your previous job before this one?
    □ peasant □ salesman □ employee □ other (indicate_____)

12. Concluded level of Studies

□ primary school □ secondary school □ high school □ other _____

ACTUAL JOB

13. ¿What kind of job do you make at the plant ?

□ cutting □ tailoring □ washing □ after care □ cleaning

□ other (specify___)

14. ¿For how long have you been in this plant?

_____months _____ years

15. ¿How many days a week do you work?

_____ days

16. ¿In what kind of transport do you come to the plant?

□ bus □ "combi" □ taxi □ bicycle □car □ other (indicate_____)

17. ¿Do you have to register your entry at the plant?

□ yes □ no

18. ¿Did you get any kind of training to do your work?

□ yes □ no

-¿How long did it last?

Indicate the number of _____ months _____years _____

-¿What did you learn?

Indicate _____

19. ¿How long did it take you to get used to the working environment of the plant?

____days ____ months ____ years

20. ¿What other kind of activities do you do in the plant beyond you work?

□ Meals □ Spare time (indicate_____)

Please indicate if you are willing to answer another questionnaire at your house

□ yes □ no

HOME

21. ¿Who supports the family spending?

    Indicate_____

22. ¿What jobs do the other members of the family do?

Name	Age	Filial Relation	Job

23. ¿Which are your spending priorities ? (order from the most to the least important)

    □ food □ health □ clothing □ housing □ transport □ gifts □ education

    □ leisure □ other (specify____)

24. What proportion of your income do you bring to your house

    □ half of it □ less than half of it □ more than half of it □ all of it □ other (_____)

25. ¿Who takes the important spending decisions in the house?

    Specify_____

26. ¿Who brings most of the total family income?

    Specify _____

27. ¿What services do you count with in your house?

    □ drinking water □ electric light □ "sumidero" □ concrete floor

28. ¿Do you count with the following amenities?

    □ radio □ television □ refrigerator □ videocasete player □ fan

29. ¿Do you count with the following public services in your neighborhood?

    □ lighting □ pavement □ "desagüe" □ servicio de limpia □ post □ telephone □ public security □ schools □ hospitals □ other (specify _____)

30. ¿Which of the following do you consider to be the worst problem in the community?

    □ water provision □ el servicio de limpia □ drenaje □ lighting □ pavement □ security □ other (specify _____)

31. ¿Have any of the family members left to work abroad since you work in the plant?

    □ yes (specify the blood link and the number of people_____)

    □ no

32. ¿Have any of the family members left to study abroad since you work in the plant?

□ yes (specify the blood link and the number of people _____)

□ no

33. ¿Do you have land to cultivate?

□ no □ a few □ enough

34. ¿Have you aquired land to cultivate since you work in the plant?

□ yes □ no

35. ¿Do you live in the same house then before you came to work in the plant?

□ yes

□ no (did you change from neighborhood □ yes □ no, did you get another house □ do you rent another house □)

The Communitiy

36. ¿Do you actively work or cooperate with the community you live with?

□ intensely □ I am not inetrested □ occasionally □ just when it is necessary

37. ¿Qué tipo de labor desempeña en su trabajo comunitario?

Specify_____

38. ¿Do you join parties/celebrations in your community?

□ always do □ only in important festivities □ no

Please indicate if you are willing to answer another questionnaire at your house

□ yes □ no

Questionnaire Two

Monty Workers at Home

Name: Address:

1. ¿Why did you go to work to Monty?
   Specify _____
2. ¿How did you get the job?
   □ a relative recomended it to me or □ helped me (specify blood link_____)
   □ a friend recomended it to me or □ helped me □ I went to apply for the job by myself
   □ I founf out the needed people and went to see □ other (specify_____)
3. ¿Is this your first job?
   □ yes □ no (go to question 8)
4. ¿Which was your prior job?
   Employment sector
   □ agriculture □ trade □ industry □ other (specify_____)
   Type of Job
   □ independent □ employee □ other (specify _____)
   Habilities and extra laboral skills
   □ housekeeping □ artisan □ peasant □ driver □ machina operator □ other (specify_____)
5. ¿For how long did you work there?
   Specify_____
6. ¿Why did you leave it?
   Specify _____
7. ¿Have you had other jobs?
   Specify which_____
8. ¿What qualifications do you have?
   -Prior working experience
   □ peasant □ labourer □ comerciante □ employee
   □ other (specify_____)
9. ¿Which is your concluded scholar degree?
   Specify_____
10. ¿The house you live in is...?

□ owned by you □ owned by your parents □ owned by your "suegros" □ other (specify_____)

11. ¿This house is...?

□ paid □ in process of payment □ rented □ lended

12. ¿For how long have you been living in this house?

Specify_____

13. ¿Why did you move?

Specify_____

14. ¿Who live in this house?

Name	Age	Blood link	Job

15. ¿Could you specify the characteristics of your house according to the options?

□ roof made of light or natural materials □ roof made of bricks, concrete or other solid materials □ floor made of cement, mosaic, wood or other type of cover □ floor without cover □ specify the number of rooms _____ □ specify the number of bedrooms _____ □ do you count with an exclusive kitchen or □ non exclusive

16. ¿With what services do you count in your house ?

□ exclusive toilet or □ non exclusive □ electric power □ tubed water in the house □ in the property □ by "acarreo" from other source □ from a well

17. ¿Do you count with the following electronic appliances?

□ radio □ black and white television □ colour television □ video cassette player □ blender □ refrigerator □ washing machine □ telephone □ heater □ computer □ fan □ stove □ DVD player

18. ¿When was the last time you invested in any home improvement?

Specify _____

19. ¿What changes did you do to it?

Specify _____

20. ¿How much money did you spent on it?

Specify _____

21. ¿How long does it takes you to go from your house to the plant?

    Specify time and kind of transportation used _____

22. ¿Do you cultivate anything at home?

    □ yes □ no

23. ¿Do you raise any type of animals at home?

    □ yes □ no

24. ¿Have you invested part of your income in these activities?

    □ a considerable part of it □ only a small part of it □ occasionally □ always □ no □ never

25. ¿Do you consider these activities as an important part of the family income?

    □ yes very important □ not really □ yes a little □ no

26. ¿The training you got at Monty enables you to work in other firms or jobs ?

    □ in the same field □ in other fields □ no □ I don't know

27. ¿How different are your previous jobs and the one you realize in the plant?

    □ similar □ absolutely different □ the same

28. ¿What was the most difficult thing to get used to in the working environment at the plant?

    Specify _____

29. ¿Did you look for a job before asking for employment at Monty?

    □ yes □ no

30. ¿For how long did you look for it?

    Specify _____

31. ¿How did you do it?

    □ newspaper □ relatives □ friends □ other □ did you go to Merida

    (Specify _____)

32. ¿What offers did you get?

    Specify _____

33. ¿You earned...?

    □ less □ the same □ more

34. ¿Have you had accidents in the plant?

    □ yes □ no

35. ¿What kind of accidents?

    Specify _____

36. ¿How was the damaged repaired?

    Specify _____

37. ¿Do you know someone who has had an accident working in Monty?

□ yes □ no

38. ¿What kind of equipment are you obliged to use?

Specify _____

39. ¿To what kind of risks are you exposed to during your work?

Specify _____

40. ¿How many hours do you work a day?

Specify _____

41. ¿How many days a week?

Specify _____

42. ¿What do you do the days you don't work?

□ rest □ work in the house □ work somewhere else (Specify _____) □ help someone of your family □ go out □ other (Specify _____)

43. ¿Do you have another income source?

□ yes (Specify _____) □ no

44. ¿Your job in the plant has allowed you to spend more then your previous jobs?

□ yes □ no

45. ¿How are you paid?

□ bank card □ cash □ check □ other (Specify _____)

46. ¿When are you paid?

□ every two weeks □ weekly □ monthly □ other (Specify _____)

47. ¿Do you have a bank account or any informal way of savings?

□ yes (Specify which_____) □ no

48. ¿Your actual earnings have given you more movement capacity?

□ I move more around the municipality (Specify _____) □ I go out more from the municipality (Specify _____) □ the same

49. ¿For how long do you plan to work at Monty?

Specify _____

50. ¿Do you have any chances of been promoted?

Specify _____

51. ¿Monty's wage is better or equal to the wages in other jobs?

□ it is better □ the same □ I don't know □ worse

52. ¿What kind of services does Monty provides you with?

□ social security □ "aguinaldo" □ paid vacations □ others (Specify _____)

53. ¿What kind of changes in your life has Monty allowed you to do?

Specify _____

54. ¿Do you feel lucky for working at Monty?

□ yes □ no □ i don't know □ other (Specify _____)

55. ¿Do you do the same leisure activities then before working at Monty?

□ I do different activities (Specify _____) □ I do more activities (Specify _____) □ I do the same (Specify what do you do _____)

56. ¿Do you drink alcohol?

□ every day □ occasionally □ only in parties and celebrations□ almost never □ never

(Specify what kind of drink do you prefer _____)

57. ¿Do you feel secure about your permanence at Monty?

□ yes □ no

58. ¿Do you know when people is fired?

□ no □ yes Specify _____

59. ¿What service would you ask for as a priority?

Specify First_____

Second_____

Third_____

60. ¿Have you asked for this service to the municipality?

□ yes □ no

61. ¿Are you interested on getting land to cultivate it?

□ yes □ no

Control Questionnaire

PERSONAL CHARACTERISTICS

39. ¿How old are you?
40. ¿Which is your Sex?

    □ Feminine □ Masculin
41. ¿Where were you born?

    Specify _____
42. ¿Where do you live?

    Specify _____
43. If you changed your place of residency indicate why did you do it

    Specify _____
44. ¿What languages do you speak?

    □ spanish and maya □ only maya □ only spanish

    □ other (specify ____)
45. Indicate which is the language you use more often in

    your house _____ at work _____ the community _____
46. Civil Status

    □ single □ married □ divorced □ living with partner □ widow

EMPLOYMENT

1. ¿Do you have a job at the moment?

   Specify_____
2. Employment Sector

   □ agriculture □ commercial □ industry □ other (specify_____)
3. Type of Job

   □ independent □ employee □ other (specify_____)
4. ¿Is this your first job?

   □ yes □ no
5. ¿Which was your former job?

   Specify _____
6. If you worked at Monty please specify the position you had

   Specify _____

7. ¿Why did you change of job?

   Specify _____

8. ¿Where was it based (city, "comisaría")?

   Specify _____

9. ¿For how long did you do this work?

   Specify _____

10. ¿What qualifications do you have?

    □ peasant □ labourer □ comerciante □ employee

    □ other (specify_____)

11. Extra-labour capacities and know-how

    □ house keeper □ artisan □ peasant □ driver

    □ machinary operator □ other (specify _____)

12. ¿Did you look for a job elsewhere?

    □ yes □ no

13. ¿For how long did you look?

    Specify _____

14. ¿How did you do it?

    □ newspaper □ relatives □ friends □ other (especifique_____)

15. ¿What offers did you get?

    Specify _____

16. ¿You earned...?

    □ less □ the same □ more

17. ¿For how long do you plan to work in the same job?

    Specify _____

18. ¿Have you worked in the fields ever?

    □ for years □ occasionally □ I learnt it □ never

19. ¿When did you stop working in the fields?

    □ I haven't □ months ago □ years ago

20. Concluded level of studies

    □ primary school □ secondary school □ high school □ other _____

21. ¿What kind of transport do you use to get to work?

    □ bus □ combi □ taxi □ bycicle □car □ other (specify _____)

22. ¿Do you have to register your entry end exit from your work?

    □ yes □ no

23. ¿Did you get any training to develop the work you do?

    □ yes □ no

24. ¿How long did it last?

    Specify the number of weeks _____ months _____ years_____

25. ¿What did you learn?

    Specify _____

26. ¿How long did it take you to get used to the working environment?

    ____days ____ months ____ years

27. ¿Have you had working accidents?

    □ yes □ no

28. ¿How many hours do you work a day?

    Specify _____

29. ¿How many days a week?

    Specify _____

30. ¿What do you do the days you don't work?

    □ rest □ work at home □ work elsewhere (especifique_____) □ help someone of my family □ other (especifique_____)

31. ¿Do you have another income source?

    □ yes (specify _____) □ no

32. ¿Do you have a bank account or any other type of saving scheme?

    □ yes □ no

33. ¿What kind of leisure activities do you do?

    Specify _____

34. ¿Do you drink alcohol?

    □ every day □ occasionally □ only in parties and celebrations □ almost never □ never (Specify what kind of drink do you prefer _____)

35. ¿Do you count with social security services?

    Specify _____

36. ¿Do you medicate yourself when necessary?

    Specify _____

HOME

37. ¿How many people live in your house?

    Specify _____

38. ¿Who live in this house?

Name	Age	Blood link	Job

39. ¿ Who takes the important spending decisions in the house?

    Specify _____

    Specify _____

40. What proportion of your income do you bring to your house

□ half of it □ less than half of it □ more than half of it □ all of it □ other (_____)

41. ¿ Who brings most of the total family income?

    Specify _____

42. ¿Who is the head of the house?

    Specify _____

HOUSING

43. ¿The house you live in is ...?

    □ yours □ of your parents □ suegros □ other (specify _____)

44. ¿ This house is...?

    □ paid □ in process of payment □ rented □ lended

45. ¿ For how long have you been living in this house?

    Specify _____

46. ¿ Why did you move?

    Specify _____

47. ¿Could you specify the characteristics of your house according to the options?

    □ roof made of light or natural materials □ roof made of bricks, concrete or other solid materials □ floor made of cement, mosaic, wood or other type of cover □ floor without cover □ specify the number of rooms _____ □ specify the number of bedrooms _____ □ do you count with an exclusive kitchen or □ non exclusive

48. ¿ With what services do you count in your house?

    □ exclusive toilet or □ non exclusive □ electric power □ tubed water in the house □ in the property □ by "acarreo" from other source □ from a well

49. ¿Do you count with the following electronic appliances?

    □ radio □ black and white television □ color television □ video cassette player □ blender □ refrigerator □ washing machine □ telephone □ heater □ computer □ fan □ stove □ DVD player

50. ¿Do you cultivate anything at home?

    Specify _____

51. ¿Do you raise any type of animals at home?

    Specify _____

52. ¿Have you invested part of your income in these activities?

    □ a considerable part of it □ only a small part of it □ occasionally □ always □ no □ never

53. ¿Do you consider these activities as an important part of the family income?

    □ yes very important □ not really □ yes a little □ no

    Specify _____

54. ¿What changes did you do to it?

    Specify _____

55. ¿What service would you ask for as a priority?

    Specify First_____

    Second_____

    Third_____

56. ¿Have you asked for this service to the municipality?

    □ yes □ no

57. ¿Le interesa adquirir tierra en el futuro para trabajarla?

    □ yes □ no

58. ¿Do you practice any religion?

    Specify which_____

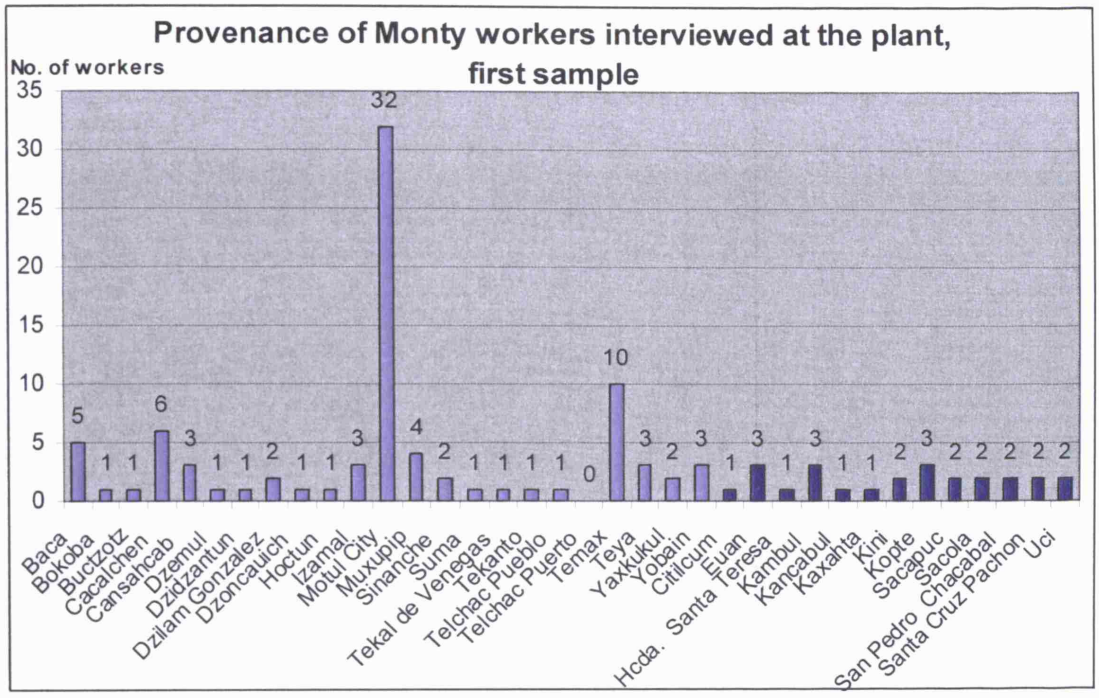
59. ¿Did you change of religion recently?

    Specify when_____

60. ¿Have you suffered any inconvenience do to an environmental issue (water, garbage, or other type of pollution)?

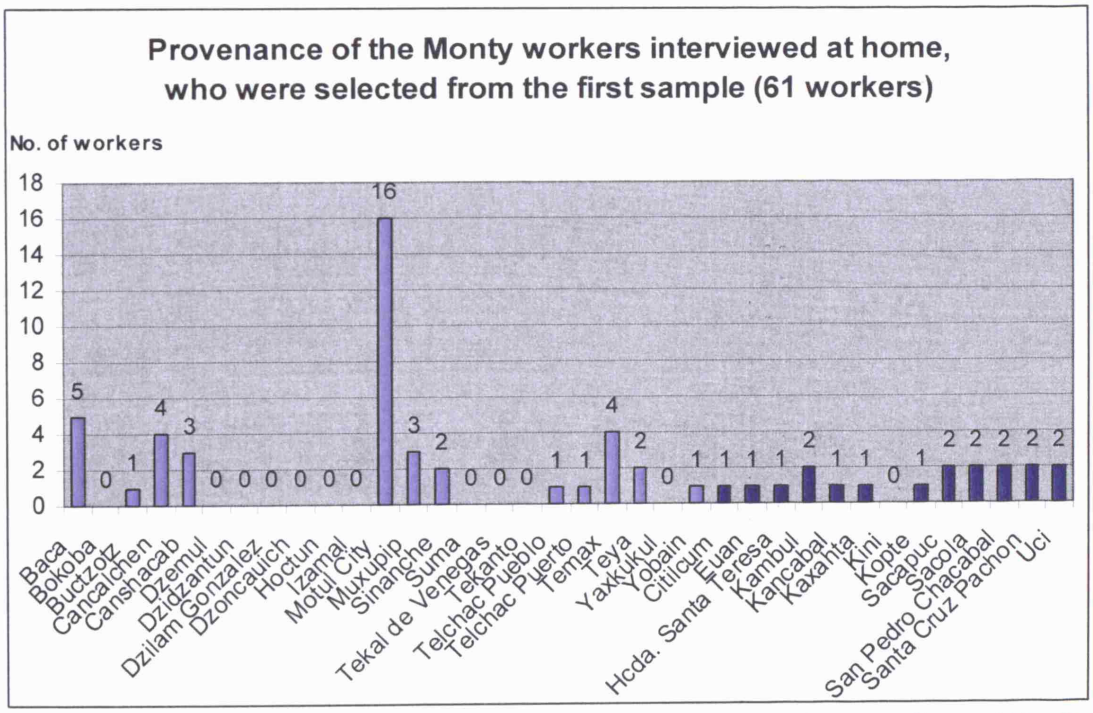
    Specify _____

Figure 4.6 Provenance of Monty workers interviewed at the plant



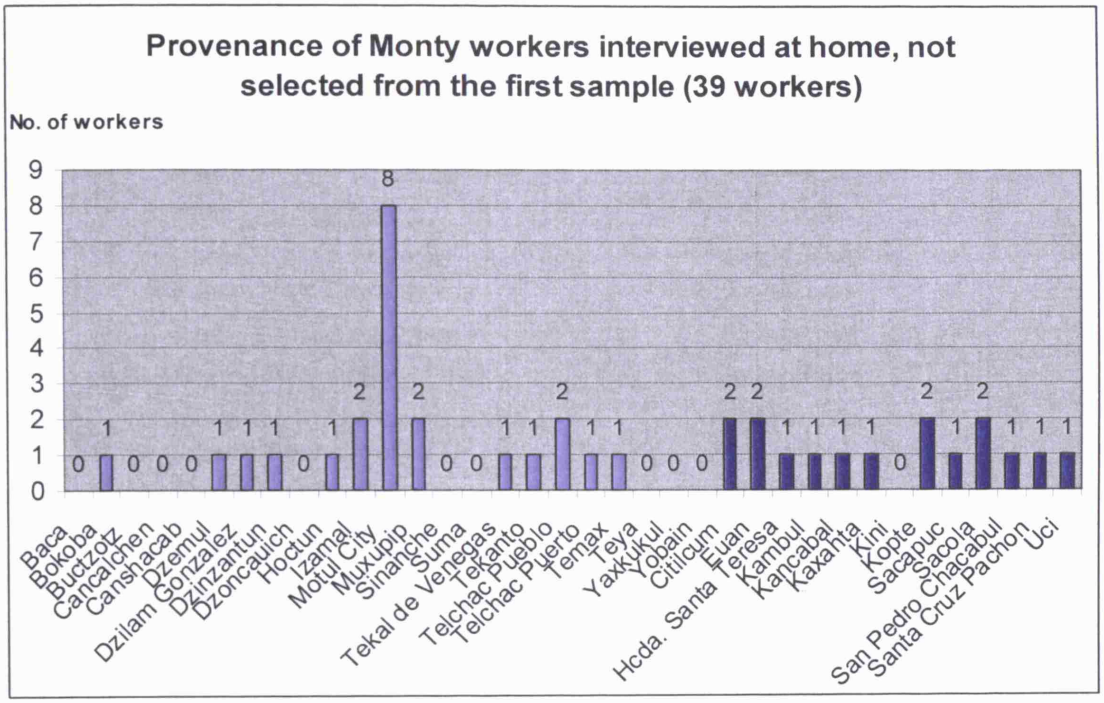
Note: darker columns on the right hand-side are 'comisarías' from Motul (and thus form part of 'greater' Motul).

Figure 4.8 Follow up questionnaires by place of residence of the workers



Note: darker columns on the right hand-side are 'comisarías' from Motul (and thus form part of 'greater' Motul).

Figure 4.9 Completion of Monty workers sample by place of residence of the workers



Note: darker columns on the right hand-side are 'comisarías' from Motul (and thus form part of 'greater' Motul).

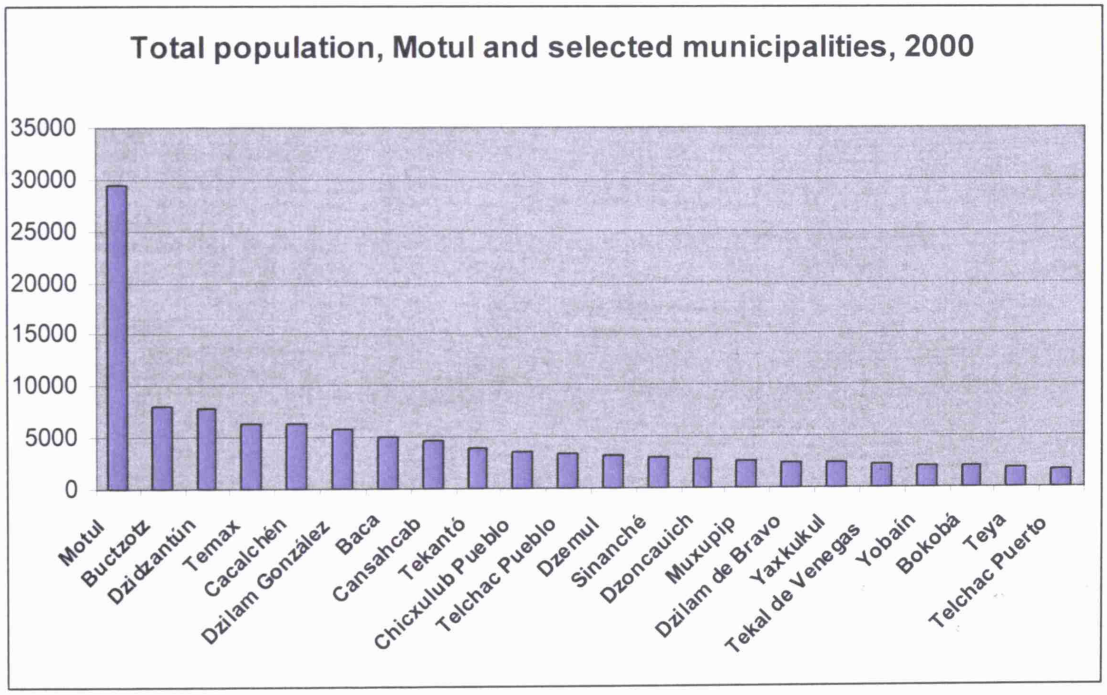
Monty Workers' names by location

Full Name	Location
Eugenia **Canche Caamal**	Baca
Gladis del S. ***Aguayo*** **Chan**	Baca
Jose Refugio **Dzib Chuc**	Baca
Pedro Gualberto **Poot Dzib**	Baca
Mayra Vanesa ***Aldecua*** **Pool**	Baca
Nelia ***Lizama Rivero***	Buctzotz
Carlos J. **May** ***Estrella***	Cacalchen
Fatima Nayi **Chan Nah**	Cacalchen
Jesus Kerlin **Oxte Chan**	Cacalchen
Martha Mergeli **Muy Chan**	Cancabchen
Inocencio Roberto **Natl Hau**	Cansahcab
Jazmin **Pech Canche**	Canshacab
Marcelino **Ek Chan**	Canshacab
Gonzalo **Mian Aban**	Citilcum
Maria Francisca **Penchan**	Hacienda Sacola
Nelly Cristina ***Tamayo Flores***	Hacienda Santa Teresa
Hector **May Ake**	Kambul
William F. C. **Kuk May**	Kambul
Jose Angel **Can**	Kancabul
Carlos ***Tamayo Martin***	Kaxahta
Patricia A. **Euan** ***Gamboa***	Kopte
Abril **Pech Quijano**	Motul
Filomeno **Pech May**	Motul
Jose Gpe. ***Hernandez*** **Mukul**	Motul
Juan Enrique ***Centeno*** **Chak**	Motul
Marciala del C. **Kuk y Can**	Motul
Maria Argimina ***Mena***	Motul
Maria Concepcion **Can Can**	Motul
Maria Concepcion **Uc Dzib**	Motul
Maria de Jesus **Sima Pech**	Motul
Maria Leticia **Noh**	Motul
Maria Mirna **Puch Vitz**	Motul
Maria Teresa **Koh Canceh**	Motul
Marisol **Cacamal Dzul**	Motul
Mildred Adriana **Euan** ***Vicaria***	Motul
Obed **Cetz May**	Motul
Yolanda B. **Dzib** ***Quevedo***	Motul
Jose Arturo ***Lara Ramirez***	Muxupip
Jose Rafael ***Lavadores*** **Tun**	Muxupip
Manuel J. ***Estrella*** **Lup**	Muxupip
Asuncion **Baas Caamal**	Sacapuc
Maria **Coh Buas**	Sacapuc
Maria Francisca **Pech Chan**	Sacola
Marcos **Mac Balam**	San Pedro Chacabal
Fermin **Mac Mac**	San Pedro Chacabal

Carlos **Koh** ***Bacelis***	Santa Cruz Pachon
Roger de la Cruz **Chale Chan**	Santa Cruz Pachon
Carlos Augusto ***Palma Pinzon***	Sinanche
Eggie Mandy **Koh** ***Pinzon***	Sinanche
Margarita del Socorro ***Conrrado*** **Chan**	Telchac
Jesus Enrique ***Alfaro*** **Chan**	Telchac Pueblo
Antonio ***Medina Escalante***	Temax
Ariel Asuncion ***Mendez Escalante***	Temax
Carlos **Caamul Pech**	Temax
Cynthia Karina ***Perez Sanchez***	Temax
Silvia **Balam Aban**	Teya
J. Fidelino **Balam**	Teya
Gregorio **Cauich Euan**	Timul
Nelly P. **May** ***Tamayo***	Uci
Roger Humberto **Tec Moo**	Uci
Carlos **Yam** ***Heredia***	Yobain

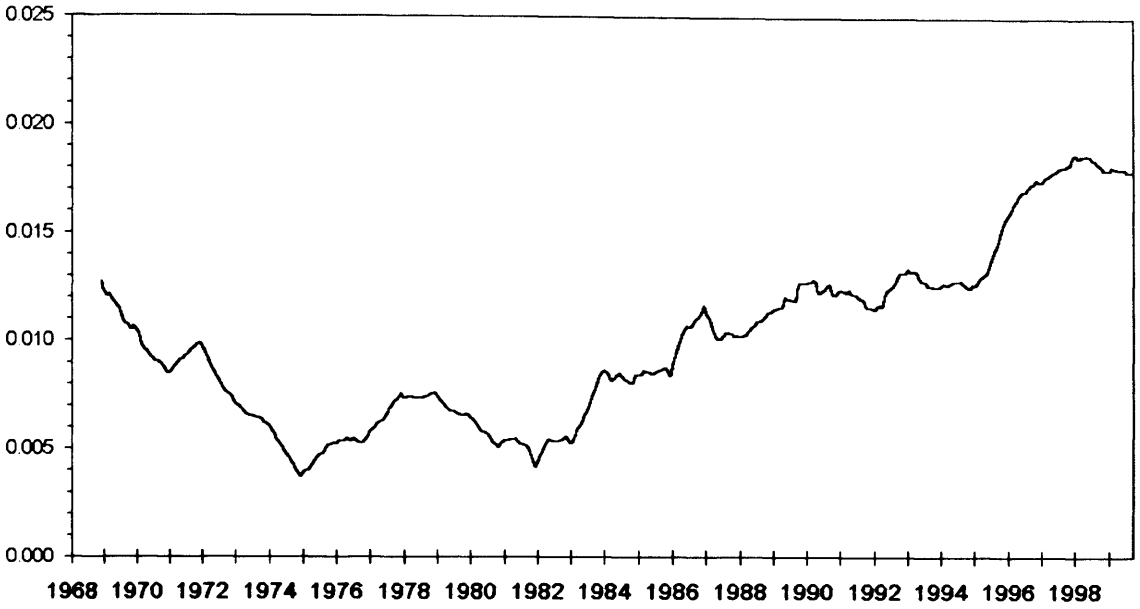
Note: Only workers who filled the first questionnaire at the plant and were visited at home appear in this table.

Motul and municipalities by size, 2000.



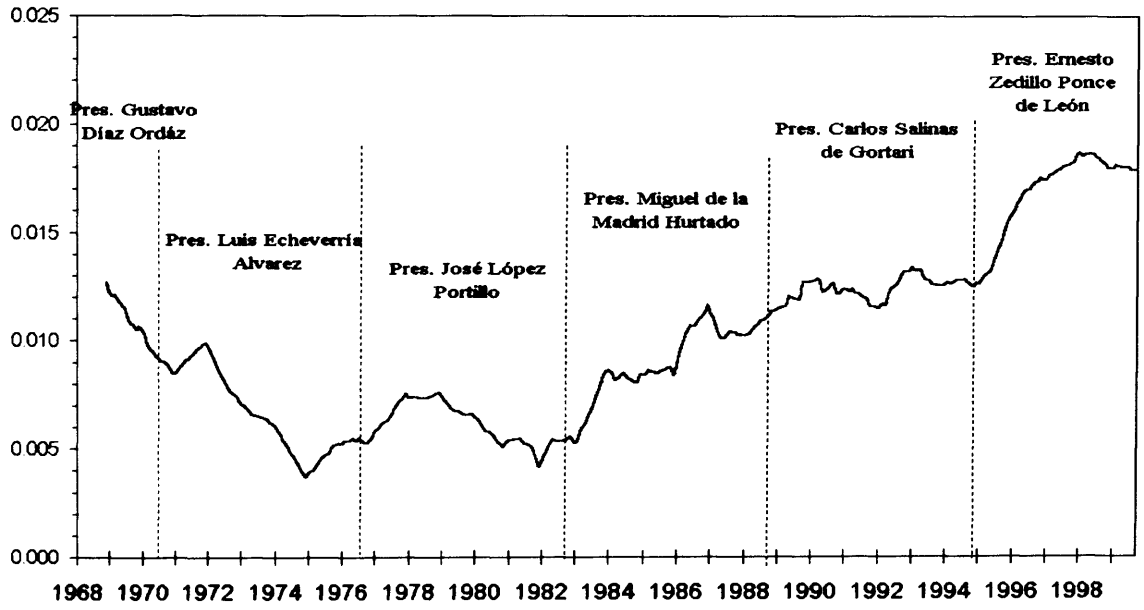
Source: INEGI (2007)

Manufacturing Wage Inequality in Mexico
Jan. 1968-Oct.1999



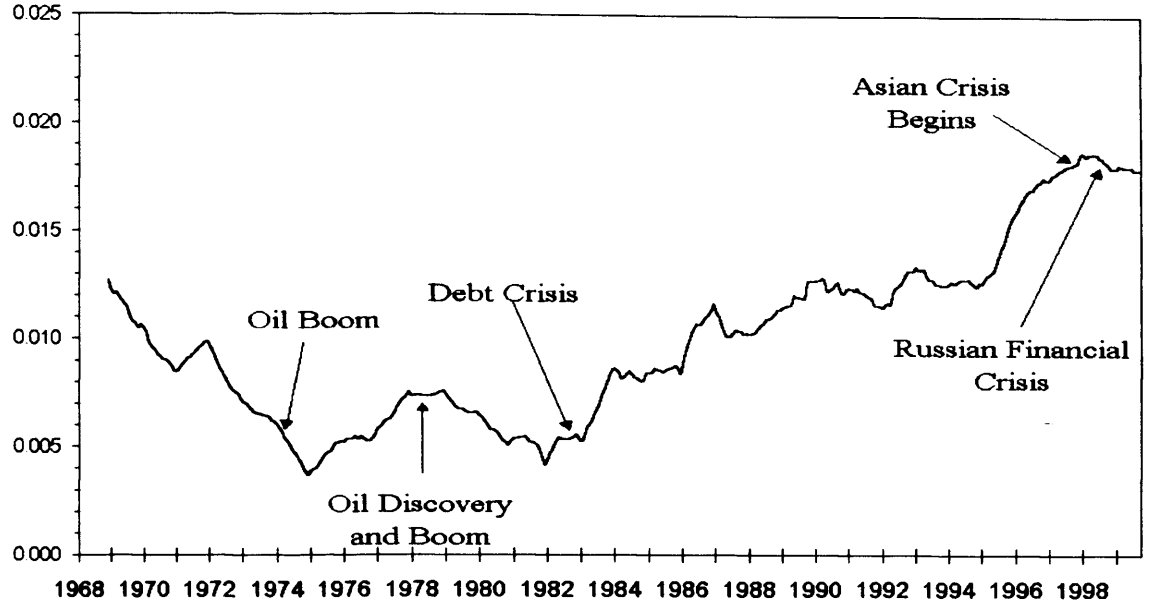
Source: Galbraith, J. and Garcilazo, E. (2004). Power Point presentation found in:
http://utip.gov.utexas.edu
Note: units represent a Theil marginality Index.

Inequality and the Presidents in Mexico



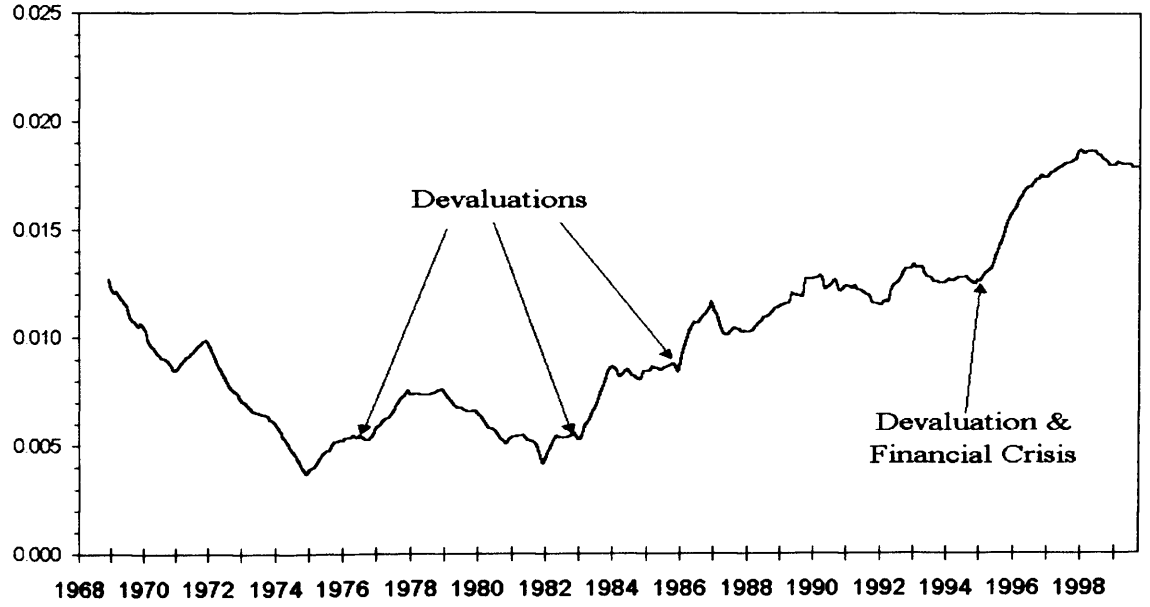
Source: Galbraith, J. and Garcilazo, E. (2004). Power Point presentation found in: http://utip.gov.utexas.edu

Wage Inequality and Five External Events



Source: Galbraith, J. and Garcilazo, E. (2004). Power Point presentation found in: http://utip.gov.utexas.edu

Wage Inequality and Peso Devaluations



Source: Galbraith, J. and Garcilazo, E. (2004). Power Point presentation found in: http://utip.gov.utexas.edu

Mexico's exports 1985-2005: Total and U.S. share

Year	Total exports (US millions)	Exports to U.S. (US millions)	(per cent)
1985	22 105	8 954	40,5
1986	16 120	7 574	47,0
1987	20 526	8 252	40,2
1988	20 765	12 102	58,3
1989	22 975	15 553	67,7
1990	26 838	18 418	68,6
1991	42 688	33 912	79,4
1992	46 196	37 420	81,0
1993	51 886	43 068	83,0
1994	60 882	51 855	85,2
1995	79 542	66 336	83,4
1996	96 000	80 541	83,9
1997	110 431	94 379	85,5
1998	117 539	103 002	87,6
1999	136 362	120 262	88,2
2000	166 121	147 400	88,7
2001	158 780	140 564	88,5
2002	161 046	141 898	88,1
2003	164 766	144 293	87,6
2004	187 999	164 522	87,5
2005	213 711	183 052	85,7

Source: 1985 to 1989: The Mexican Handbook: Economic and Demographic Maps and Statistics, 1994; 1990-2005: INEGI. http://dgcnesyp.inegi.gob.mx/cgiwin/bdieintsi.exe/NIVJ10#ARBOL.
In Bowles and Moreno-Brid (2006).

Domestic prices. Implicit prices of GDP, at market prices (indexes). At 1995 constant prices. Mexico.

1990	1995	2000	2001	2002	2003
43.4	100	229.6	243.7	260	277.1

Source: CEPAL (2006)

Domestic prices. General annual wholesale price indexes (base year 1995=100). Mexico.

1980	1985	1990	1996	1997	1998	1999	2000	2001	2002	2003
32.4	341	45.2	134.3	155.8	177.3	205.1	225.6	232.9	243.2	261.4

Source: CEPAL (2006)

Domestic prices. Annual consumer price indexes (base year 1995=100). Mexico city.

1980	1985	1990	1996	1997	1998	1999	2000	2001	2002	2003
(a) General Level										
0.3	3.2	44.5	134.4	162.1	187.9	219.1	239.8	255.1	268	280.2
(b) Food										
0.3	3.5	47.9	141.6	168.6	196	227	241.2	254.2	264.4	277.7

Source: CEPAL (2006)

External financing. Interest paid and outstanding (a) (millions of dollars).

	1990	1995	2000	2001	2002	2003
Mexico	9 285.0	12 143.3	13 699.0	13 704.6	12 957.1	12 838.7
Total b	39 862.6	45 173.9	58 006.3	58 264.9	50 507.7	49 673.7

Source: CEPAL (2006)
a Includes interest payments made as well as interest due but not paid.
b Refers to 17 Spanish-speaking countries plus Brazil and Haiti.

External financing. Profits paid (millions of dollars).

	1990	1995	2000	2001	2002	2003
Mexico	2 304.0	4 259.0	7 247.2	5 437.0	3 237.3	3 387.1
Total a	7 466.3	15 005.2	23 660.6	20 243.0	17 231.4	20 976.2

Source: CEPAL (2006)

External financing. Net direct Investment (a) (millions of dollars).

	1990	1995	2000	2001	2002	2003
Mexico	2 549.0	9 526.3	16 075.3	23 146.6	14 215.9	9 462.9
Total b	6 885.6	26 310.7	68 693.9	66 258.7	40 340.6	29 443.2

Source: CEPAL (2006)
a According to balance of payments values.
b Refers to 17 Spanish-speaking countries plus Brazil and Haiti.
The totals do not include those countries for which the necessary data were not available

External indebtedness. Disbursed gross external debt (a) (year-end balance in millions of dollars)

	1990	1995	2000	2001	2002	2003 b
Mexico d	117 000	164 010	148 652	144 527	140 097	140 555
Total	467 215	622 009	745 188	728 956	727 346	757 997

Source: CEPAL (2006)
a Includes the public-and private-sector external debt. Also includes IMF loans.
d Public debt does not include investments made in government securities by non-residents.

External trade of goods and services. Indices of volumes of exports of goods F.O.B (a) (base year 1995=100).

	1990	1995	2000	2001	2002	2003
Mexico	53.1	100	205.8	206.5	205.4	204.6
Total	67	100	161	165.4	167.5	175

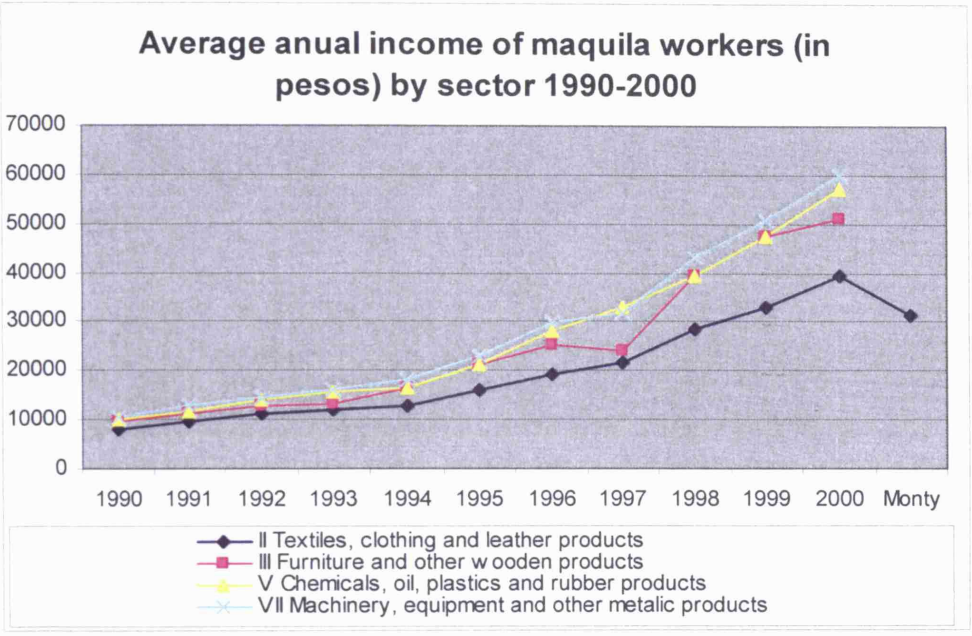
Source: CEPAL (2006)
a According to balance of payments values.

Portfolio investment income	na	-4224	na	na	na	na
Other investment income	-9 285	-7919	-13699	-13705	-12957	-12839
Balance on income	-8 316	-12689	-14856	-14003	-12096	-12470
Current transfers: credit	3 990	3 995	7 023	9 360	10 304	13 895
Current transfers: debit	-15	-35	-29	-22	-35	-37
Balance on transfers	3 975	3 960	6 994	9 338	10 268	13 858
II. BALANCE ON CAPITAL ACCOUNT a	**10**	**15**	**20**	**na**	**na**	**na**
III. BALANCE ON FINANCIAL ACCOUNT a	**8 441**	**-10487**	**22 219**	**26 383**	**22 941**	**18 113**
Direct investment abroad	na	na	na	-4 403	-930	-1 784
Direct investment in reporting economy	2 549	9 526	16 075	27550	15146	11 247
Portfolio investment assets	-7 354	-662	1 290	3 857	1134	91
Equity securities	na	na	na	0	0	0
Debt securities	-7 354	-662	1 290	3 857	1 134	91
Portfolio investment liabilities	3 369	-9 715	-1 134	3 882	-632	3 864
Equity securities	1 995	519	447	151	-104	-123
Debt securities	1 374	-10234	-1 581	3 731	-528	3 987
Other investment assets	-1 345	-6694	5 809	-7 691	10 671	6 843
Monetary authorities	...	...	...	...	...	...
General government	na	-3619	na	na	na	na
Banks	-749	-1510	45	na	na	na
Other sectors	-596	-1565	5 764	na	na	na
Other investment liabilities	11 222	-2942	179	-975	-3 377	-3 931
Monetary authorities	...	-788	na	na	na	na
General government	1 657	210	-2 896	na	na	na
Banks	9 061	-5297	-883	na	na	na
Other sectors	504	2 933	3 959	na	na	na
IV. ERRORS AND OMISSIONS	**1 218**	**-4263**	**3 075**	**-881**	**-2 060**	**65**
V. GLOBAL BALANCE	**2 218**	**-6312**	**7 126**	**7 325**	**7 090**	**9 438**
VI. RESERVES AND RELATED ITEMS	**-2 218**	**16312**	**-7 126**	**-7 325**	**-7 090**	**-9 438**
Reserve assets	-3 261	-9648	-2 862	-7 325	-7 090	-9 438
Use of IMF credit and loans	958	11950	-4 288	na	na	na
Exceptional financing	85	14010	24	na	na	na

Source: CEPAL (2006)

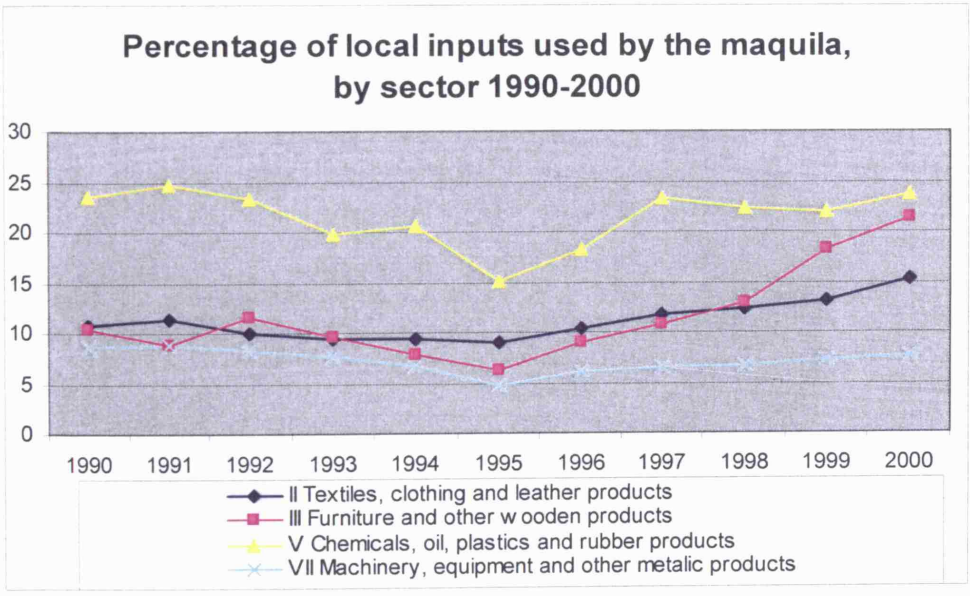
a Excluded components that have been classified in the categories of Group VI.

Maquila workers' average annual income by sector, 1990-2000.



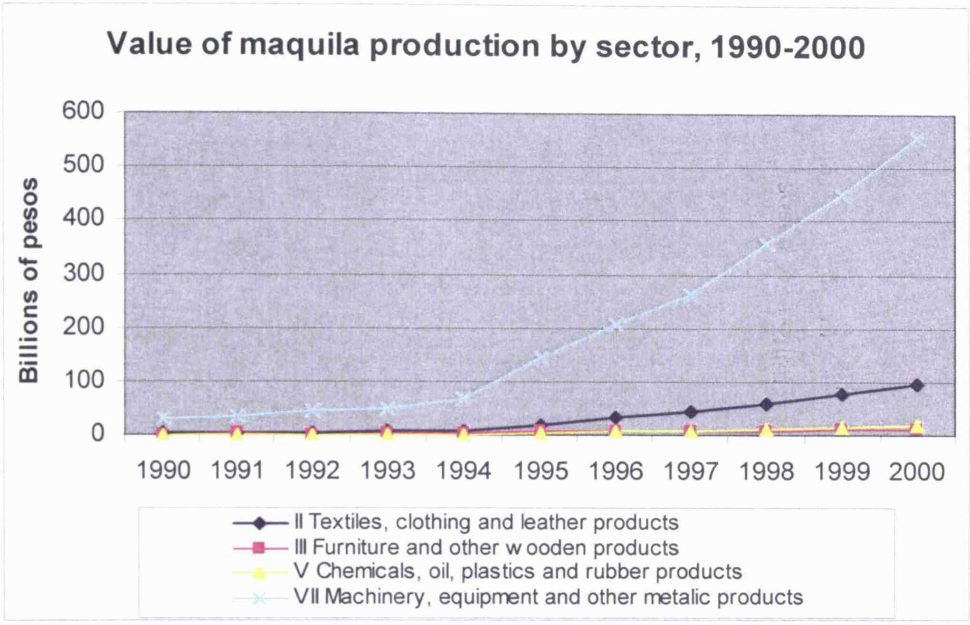
Source: INEGI (2007)

Percentages of local inputs used in the maquila by sector, 1990-2000.



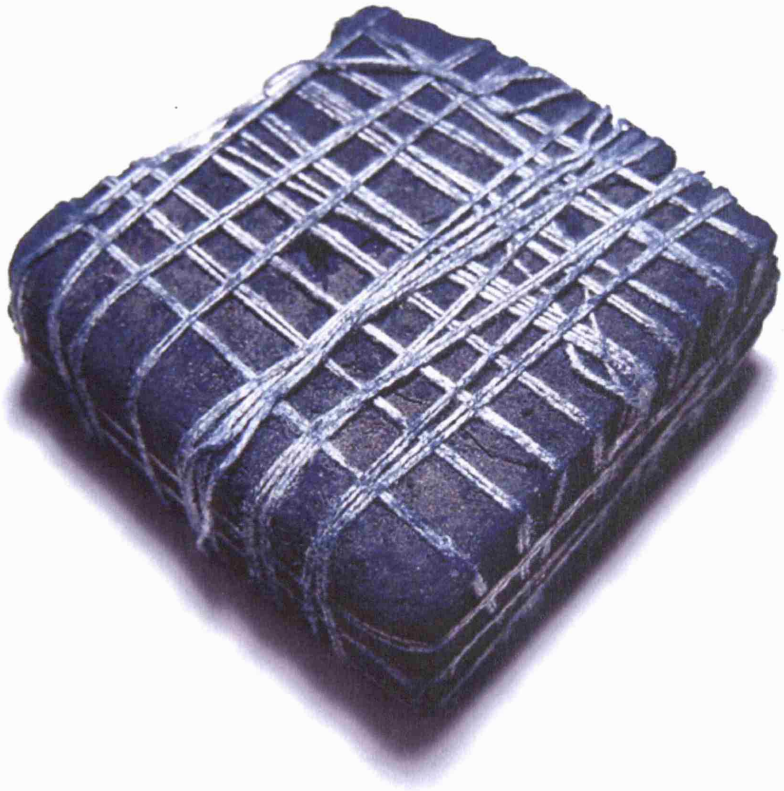
Source: INEGI (2007)

Value of maquila production by sector, 1990-2000.

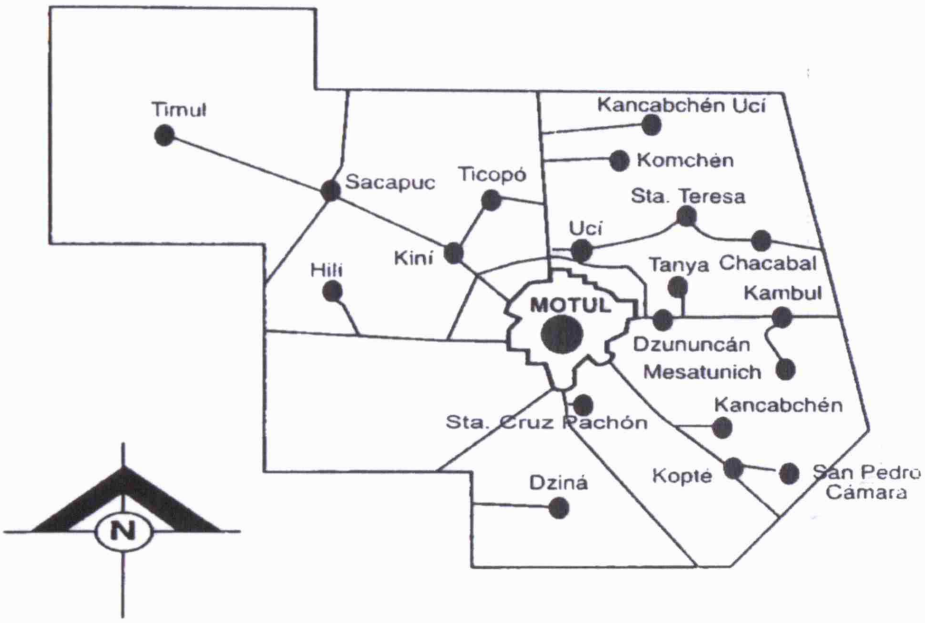


Source: INEGI (2007)

Indigo Dye



Comisarías from Motul



Machinery House in Ex-henequen Hacienda

Motul's Church and Ex-Monastery

Henequen field

Traditional Maya House

Maya Women selling Embroideries

External financing. Net transfer of resources (a) (millions of dollars and percentages).

	Net transfer of resources (millions of dollars)						Transfer of resources a percentage of exports of goods and services					
	1990	1995	2000	2001	2002	2003	1990	1995	2000	2001	2002	2003
Mexico	2,395	-1,464	6,194	11,498	8,785	5,708	4.9	-1.6	3.4	6.7	5.1	3.2
Total b	-17,821	20,262	-46	-2,893	-40,896	-34,384	-11	7.6	-0.1	-0.7	-10.4	-8.1

Source: CEPAL (2006)

a Minus signs indicate an outward transfer of resources.

b Refers to 17 Spanish-speaking countries plus Brazil and Haiti. The totals do not include those countries for which the necessarydata were unavailable.

External financing. International reserves (stocks) (millions of dollars).

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Mexico	525	931	1032	25298	19171	17046	19527	28852	31862	31828	36939	46167	46300	54685

Source: CEPAL (2006)

Evolution of the Export Maquila Industry
(percentages)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total employees in the EMI/ Total employees in the Manufacturing industry	12.2	13.6	13.8	14.1	15.0	16.4	17.5	21.1	23.0	25.3	26.9	29.2	31.5	na	na
Maquila salaries/ Total value added of the EMI	48.8	50.8	51.5	51.0	54.7	55.6	56.5	48.9	48.5	49.5	48.6	48.6	50.8	49.3	49.5
National inputs used by the EMI/ Total value added of the EMI	5.6	5.0	5.2	5.3	5.8	5.8	5.1	7.2	9.0	8.8	10.3	10.1	9.8	10.1	11.0
Maquila exports/ Total exports	33.1	35.1	34.1	37.1	40.4	42.1	43.1	39.1	38.5	40.9	45.2	46.8	47.7	48.5	48.5
Imports for the EMI/ Total imports	27.8	26.8	24.9	23.6	22.4	25.2	25.8	36.1	34.1	33.1	33.9	35.5	35.4	34.2	35.4
Maquila income/ Income current account	5.6	6.2	6.3	7.0	7.7	8.0	7.4	5.1	5.6	6.7	7.5	9.5	9.2	10.4	10.5
Maquila value added/ GDP	1.3	1.4	1.3	1.3	1.3	1.4	1.4	1.8	2.0	2.3	2.8	2.9	3.0	3.1	na

Source: Sotelo (2004)

Monty worker's relatives' occupations, male and female (absolute numbers)

Men						Women				
Monty 40	Other maquila 2	Peasant 28	Builder 24	Farm employee 2	Trade 6	Monty 27	Domestic service 7	Tailor 3	Store employee 2	Nurse/ kitchen helper/ secretary 3
Employee (store, tourism) 10	Electrician 5	Diverse 3	Public services 5	Henequen factory 2	Pensioner 2					
Gardener 1	Policeman 1	Plumber 1	Chauffeur 1	Guardian 1	Artisan 1					
Mechanic 1	Taxi driver 1	Carpenter 2	Blacksmith 1	Unemployed 2						

Occupation by Gender, Control Sample (absolute numbers)

Men						Women				
Monty 0	Other maquila 0	Peasant 19	Builder 28	Farm employee 0	Trade 5	Monty 0	Domestic service 10	Tailor 1	Store employee 12	Nurse/ kitchen helper/ secretary 1
Employee (store, tourism) 22	Electrician 3	Diverse 0	Public services 3	Henequen factory 0	Pensioner 4	Pensioner 2				
Gardener 0	Policeman 0	Plumber 0	Chauffeur 3	Guardian 1	Artisan 1					
Mechanic 2	Taxi driver 1	Carpenter 4	Blacksmith 1	Unemployed 0	Baker 1					
Teacher 1	Painter 2									